

# Exhibit 1

<p>1 BY MR. BOYEA: 9:39AM</p> <p>2 Q And is your testimony that you only have</p> <p>3 vague knowledge of casting?</p> <p>4 MR. KAPLAN: Object to form, misstates</p> <p>5 testimony. 9:39AM</p> <p>6 THE WITNESS: My answer was in particular</p> <p>7 to these steps that are in front of me.</p> <p>8 BY MR. BOYEA:</p> <p>9 Q Okay. Let's move on to starting at</p> <p>10 Line 10 of that same page that you're looking at. 9:39AM</p> <p>11 There is discussion of, quote/unquote,</p> <p>12 stream transfer a feature that Google refers to as</p> <p>13 "stream transfer."</p> <p>14 Are you familiar with stream transfer?</p> <p>15 A Can you clarify what "stream transfer" is 9:39AM</p> <p>16 exactly?</p> <p>17 Q If you could read what is set forth their</p> <p>18 starting at Lines 14, this is Google's own</p> <p>19 documentation referring to stream transfer.</p> <p>20 Go ahead and give that a read and let me 9:40AM</p> <p>21 know if you're familiar with what stream transfer</p> <p>22 is.</p> <p>23 A Line 14 references a blog.</p> <p>24 Q Yes.</p> <p>25 A Do you want me to read that? 9:40AM</p> <p>Page 22</p>	<p>1 for this topic for four different apps. 9:42AM</p> <p>2 So we'll just put that objection in and</p> <p>3 we'll resolve that off the record.</p> <p>4 Q So, Mr. Mo, if you turn to the following</p> <p>5 page, you'll see starting at Line 5 through 8 there 9:42AM</p> <p>6 is some discussion of an "up next" feature and an</p> <p>7 "autoplay" feature.</p> <p>8 Let me know once you're there.</p> <p>9 A I'm there.</p> <p>10 Q Can you go ahead and review the screenshot 9:42AM</p> <p>11 that starts at Line 10?</p> <p>12 A Okay. I've seen that screenshot.</p> <p>13 Q Are you familiar with the feature that</p> <p>14 Google refers to as "up next"? And specifically up</p> <p>15 next suggests additional content based on whatever 9:43AM</p> <p>16 you're currently watching.</p> <p>17 Are you familiar with that feature?</p> <p>18 A I have seen the feature.</p> <p>19 Q You've seen the feature.</p> <p>20 Are you going to be able to me how the up 9:43AM</p> <p>21 next feature is implemented in Google's system?</p> <p>22 A No, I'm not able to.</p> <p>23 MR. BOYEA: All right. Sonos is going to</p> <p>24 object once again because Mr. Mo is designated on</p> <p>25 this topic for four different YouTube apps. 9:43AM</p> <p>Page 24</p>
<p>1 Q There is a screenshot below starting at 9:40AM</p> <p>2 Line 15, if you could read that screenshot that</p> <p>3 refers to "stream transfer." Read it to yourself</p> <p>4 and let me know if you're familiar with what is</p> <p>5 being referred to as a stream transfer feature. 9:40AM</p> <p>6 A What lines should I stop reading?</p> <p>7 Q What lines did you read?</p> <p>8 A Fourteen through 23.</p> <p>9 Q I think that's sufficient.</p> <p>10 Are you familiar with the stream transfer 9:41AM</p> <p>11 feature that's referred to in those lines?</p> <p>12 A I have heard of the word "stream transfer."</p> <p>13 Q You've heard of it.</p> <p>14 Are you familiar with the functionality</p> <p>15 that enables that feature to be used by a user? 9:41AM</p> <p>16 MR. KAPLAN: Object to form.</p> <p>17 THE WITNESS: Can you clarify what do you</p> <p>18 mean by being familiar with?</p> <p>19 BY MR. BOYEA:</p> <p>20 Q Are you going to be able to tell me how 9:41AM</p> <p>21 that feature is actually implemented?</p> <p>22 A I'm not. I do not know how stream transfer</p> <p>23 works underneath the...</p> <p>24 MR. BOYEA: Okay. So Sonos is going to</p> <p>25 object obviously, Marc, because Mr. Mo is designated 9:42AM</p> <p>Page 23</p>	<p>1 MR. KAPLAN: Well, very quickly, Mr. Mo is 9:43AM</p> <p>2 designated on these topics as they relate to casting</p> <p>3 functionality for four different apps.</p> <p>4 MR. BOYEA: Yes, I understand that. They</p> <p>5 are part and parcel of one another. 9:44AM</p> <p>6 But we'll have to figure this out off the</p> <p>7 record. So --</p> <p>8 MR. KAPLAN: You can object now, but I</p> <p>9 think as we get into questions, I think some of this</p> <p>10 is going to be sorted out. So let's continue and 9:44AM</p> <p>11 short circuit any questions on sort of functionality</p> <p>12 as to these topics.</p> <p>13 MR. BOYEA: Marc, but you know you guys</p> <p>14 designated him for all of these topics for four</p> <p>15 different apps. I'm going to have a very short 9:44AM</p> <p>16 amount of time to ask him questions and I'm having</p> <p>17 to spend this time being told that he doesn't know</p> <p>18 information regarding these topics.</p> <p>19 So I'm going to have to prioritize what I</p> <p>20 ask because he's telling me he doesn't know about 9:44AM</p> <p>21 these features.</p> <p>22 MR. KAPLAN: He knows about cast. That's</p> <p>23 what he's been designated on. I think if you ask</p> <p>24 those questions that you had planned to ask for</p> <p>25 cast, then we're going to cover these topics 9:45AM</p> <p>Page 25</p>

<p>1 sufficiently. 9:45AM</p> <p>2 But please continue.</p> <p>3 BY MR. BOYEA:</p> <p>4 Q Mr. Mo, if you look at the bottom of the</p> <p>5 page that you're at, there is another screenshot 9:45AM</p> <p>6 called "Autoplay videos."</p> <p>7 Do you see that?</p> <p>8 A I see the section. Is there a screenshot</p> <p>9 that you wanted me to look at?</p> <p>10 Q Yes. It starts at Line 24, 25. There is 9:45AM</p> <p>11 a screenshot that's titled "Autoplay videos."</p> <p>12 A Okay. I see it.</p> <p>13 Q Are you familiar with the autoplay feature</p> <p>14 being described in this screenshot?</p> <p>15 A The screenshot being the text about 9:45AM</p> <p>16 autoplay?</p> <p>17 Q Yes, exactly.</p> <p>18 A Without the context of which this text is</p> <p>19 from, it's hard to know which specific context</p> <p>20 autoplay is for. 9:46AM</p> <p>21 Q So it describes here in the screenshot,</p> <p>22 "The autoplay feature on YouTube."</p> <p>23 So are you familiar with the autoplay</p> <p>24 feature on YouTube?</p> <p>25 A I'm aware of it. 9:46AM</p> <p>Page 26</p>	<p>1 casting. 9:48AM</p> <p>2 Q Yes. So before casting.</p> <p>3 A Before casting, I'm not familiar with</p> <p>4 autoplay.</p> <p>5 Q And what about after casting, are you 9:48AM</p> <p>6 familiar with autoplay?</p> <p>7 A It depends on which -- I would need you to</p> <p>8 clarify again where -- what part of the YouTube</p> <p>9 experience you're referring to.</p> <p>10 Q I'm not sure I know what other context I 9:48AM</p> <p>11 need to give you.</p> <p>12 So in the context of casting YouTube to a</p> <p>13 receiver device, are you familiar with how the</p> <p>14 autoplay feature is implemented?</p> <p>15 A On which device? 9:49AM</p> <p>16 Q Are there multiple devices that autoplay</p> <p>17 would be implemented on?</p> <p>18 A Yes, depending on the context once again.</p> <p>19 Q In the context of casting YouTube to a</p> <p>20 receiver, what other context do you need to know to 9:49AM</p> <p>21 be able to answer my question?</p> <p>22 A Just which client do you want to know about</p> <p>23 autoplay for that particular use case?</p> <p>24 Q When you say "client," what do you mean by</p> <p>25 the term "client"? 9:49AM</p> <p>Page 28</p>
<p>1 Q Are you going to be able to explain how 9:46AM</p> <p>2 the autoplay feature is implemented on the YouTube</p> <p>3 apps?</p> <p>4 A Which YouTube app specifically?</p> <p>5 Q Let's start with the YouTube main app or 9:46AM</p> <p>6 just the YouTube app.</p> <p>7 Are you familiar with how the autoplay</p> <p>8 feature is implemented in that app?</p> <p>9 MR. KAPLAN: Object to form.</p> <p>10 THE WITNESS: Is there a specific context 9:47AM</p> <p>11 within which the app is used?</p> <p>12 BY MR. BOYEA:</p> <p>13 Q Whether it's casting or not casting.</p> <p>14 MR. KAPLAN: Object to form.</p> <p>15 THE WITNESS: So you're asking 9:47AM</p> <p>16 specifically about apps on a particular surface?</p> <p>17 BY MR. BOYEA:</p> <p>18 Q I'm asking -- yes, let's start with when</p> <p>19 YouTube is being run on a phone, for instance, are</p> <p>20 you familiar with how the autoplay feature is 9:47AM</p> <p>21 implemented?</p> <p>22 A I need more specific context in addition to</p> <p>23 that.</p> <p>24 Q What else, what other context do you need?</p> <p>25 A Whether it's related -- whether it's during 9:48AM</p> <p>Page 27</p>	<p>1 A Sender or receiver. 9:49AM</p> <p>2 Q So we're going to get into some</p> <p>3 terminology, so maybe this is good.</p> <p>4 Can you explain to me what you mean by</p> <p>5 "sender"? 9:50AM</p> <p>6 A Sender is what I refer to as YouTube client</p> <p>7 such as a mobile device where a user may cast from.</p> <p>8 The receiver device, the receiver client</p> <p>9 is the device for the client that the user is</p> <p>10 casting to. 9:50AM</p> <p>11 Q Okay. And in this context I want to make</p> <p>12 sure I understand what the receiver is. Is that in</p> <p>13 a Chromecast device?</p> <p>14 A That can be one.</p> <p>15 Q Okay. And would that -- would a receiver 9:50AM</p> <p>16 be any Nest Smart speaker?</p> <p>17 A Yes. Some Nest speakers are considered to</p> <p>18 be a receiver device.</p> <p>19 Q You said, "Some Nest speakers are</p> <p>20 considered to be speaker devices." 9:51AM</p> <p>21 What Nest speakers are not considered</p> <p>22 receiver devices?</p> <p>23 A I don't know off the top of my head.</p> <p>24 Q So are you able to think of any Nest</p> <p>25 speaker that would not be considered a receiver 9:51AM</p> <p>Page 29</p>

<p>1 device? 9:51AM</p> <p>2 A Not that I am aware of right now.</p> <p>3 Q So would you agree with me that a Nest</p> <p>4 Mini, Nest Audio, Nest Hub and Nest Hub Max would be</p> <p>5 considered a receiver device? 9:52AM</p> <p>6 MR. KAPLAN: Object to form.</p> <p>7 THE WITNESS: When they are being used in</p> <p>8 casting, yes.</p> <p>9 BY MR. BOYEA:</p> <p>10 Q Would you agree with me that a Home Mini, 9:52AM</p> <p>11 Home, Home Max and Home Hub are considered to be</p> <p>12 receiver devices when used in casting?</p> <p>13 A Yes, I would refer to those as receiver</p> <p>14 devices.</p> <p>15 Q I know you said yes to Chromecast earlier, 9:52AM</p> <p>16 but would a Chromecast, Chromecast Audio, Chromecast</p> <p>17 Ultra and Chromecast with Google TV be considered a</p> <p>18 receiver in casting?</p> <p>19 A Yes, they can be referred to as receivers.</p> <p>20 Q And then what about the Nest WiFi Point, 9:53AM</p> <p>21 would that be considered a receiver when casting?</p> <p>22 A I'm aware of one Nest WiFi that can act as a</p> <p>23 receiver device.</p> <p>24 Q And is that the Nest WiFi Point?</p> <p>25 A I'm not familiar with the actual names, the 9:53AM</p> <p>Page 30</p>	<p>1 THE WITNESS: Sorry about that. 9:56AM</p> <p>2 MR. BOYEA: No problem.</p> <p>3 Q So I asked previously: What code have you</p> <p>4 written that deals with casting?</p> <p>5 A Do you have any specifics in mind? Since 9:56AM</p> <p>6 that's pretty broad.</p> <p>7 Q Sure. You mentioned sender and receiver</p> <p>8 before. So let me start with: Have you written</p> <p>9 sender side code for casting?</p> <p>10 A For YouTube on the YouTube clients. 9:56AM</p> <p>11 Q And when you say "for YouTube," are you</p> <p>12 referring specifically to the YouTube main app or</p> <p>13 more generally to the YouTube apps that I understand</p> <p>14 there are four -- at least four different YouTube</p> <p>15 apps? 9:57AM</p> <p>16 MR. KAPLAN: Object to form.</p> <p>17 THE WITNESS: What are the four YouTube</p> <p>18 apps once again?</p> <p>19 BY MR. BOYEA:</p> <p>20 Q So you're familiar with the YouTube main 9:57AM</p> <p>21 app; correct?</p> <p>22 A I am, yes.</p> <p>23 Q And that's typically more generally just</p> <p>24 referred to as the YouTube app; isn't that right?</p> <p>25 A That can be the case, yes. 9:57AM</p> <p>Page 32</p>
<p>1 official names. 9:53AM</p> <p>2 Q Okay. So you used the term "sender"</p> <p>3 before. Are you familiar with the Nest Hub devices?</p> <p>4 A Yes, I've heard of Nest Hubs.</p> <p>5 Q Is a Nest Hub device, can it be considered 9:53AM</p> <p>6 a sender when casting?</p> <p>7 A No. I don't -- I would not refer to it as a</p> <p>8 sender.</p> <p>9 Q Okay. So I'm going to get back to these</p> <p>10 topics that you've been designated for. 9:54AM</p> <p>11 Now, are you familiar with the source code</p> <p>12 that enables the casting functionality in Google's</p> <p>13 products?</p> <p>14 A Can you please speak more specific?</p> <p>15 Q Sure. Have you -- do you write source 9:55AM</p> <p>16 code for the casting functionality?</p> <p>17 A Yes, I have written code that deals with</p> <p>18 casting.</p> <p>19 Q And what code have you written that deals</p> <p>20 with casting? 9:55AM</p> <p>21 A I'm sorry, something triggered within my</p> <p>22 house that is playing sound. Can I disable that?</p> <p>23 Q Yes. Go ahead.</p> <p>24 A Okay.</p> <p>25 MR. KAPLAN: Too many smart devices. 9:55AM</p> <p>Page 31</p>	<p>1 Q And you're familiar with the YouTube Music 9:57AM</p> <p>2 app; correct?</p> <p>3 A I'm aware of the YouTube Music app.</p> <p>4 Q And you're aware of the YouTube Kids app;</p> <p>5 correct? 9:57AM</p> <p>6 A Yes.</p> <p>7 Q And you're aware of the YouTube TV app;</p> <p>8 correct?</p> <p>9 A Can you also -- is there a specific device</p> <p>10 of which these apps went on as well? 9:58AM</p> <p>11 Q You know, you might have cut out in the</p> <p>12 middle of that question. Can you just repeat it?</p> <p>13 A I was asking you to clarify if there are</p> <p>14 certain devices of which these apps are running on</p> <p>15 that you're asking about. 9:58AM</p> <p>16 Q At this point I'm just trying to -- you</p> <p>17 asked me to go over the four YouTube apps with you,</p> <p>18 agnostic to what they are running on. The last one</p> <p>19 I'm asking about is the YouTube TV app. I'm just</p> <p>20 making sure you have an understanding of the four 9:58AM</p> <p>21 YouTube apps I'm referring to?</p> <p>22 A I am aware of those products, yes.</p> <p>23 Q When I refer to the YouTube apps in this</p> <p>24 deposition, I want you to understand that those are</p> <p>25 the four YouTube apps that I am referring to. 9:58AM</p> <p>Page 33</p>

<p>1 A Okay. 9:58AM</p> <p>2 Q You previously said that you haven't</p> <p>3 written sender side code for YouTube on YouTube</p> <p>4 clients.</p> <p>5 My follow-up question to that is: The 9:59AM</p> <p>6 YouTube code that you've written, is it for one of</p> <p>7 these -- one of the four YouTube apps or is it for</p> <p>8 multiple of them?</p> <p>9 A The code I've written, it can be for -- it</p> <p>10 can be for any YouTube clients that want the sender 9:59AM</p> <p>11 features, sender capability.</p> <p>12 Q Have you -- sorry, I didn't mean to</p> <p>13 interrupt you.</p> <p>14 Have you written code for the receiver</p> <p>15 side of casting YouTube? 10:00AM</p> <p>16 A I've written receiver side MDX-related</p> <p>17 functionality.</p> <p>18 Q You used the term "MDX." What is MDX?</p> <p>19 A It's what we within YouTube, that's what we</p> <p>20 refer to as the stack that supports more or less 10:00AM</p> <p>21 casting. It's a stack that supports casting features.</p> <p>22 Q Is there a -- let me strike that. I'll</p> <p>23 return to that question later.</p> <p>24 So I want to shift gears just a little bit</p> <p>25 and ask you what you did to prepare for the 10:00AM</p> <p style="text-align: right;">Page 34</p>	<p>1 A I don't know. 10:02AM</p> <p>2 Q What was Ruth's last name?</p> <p>3 A I actually don't have -- I don't know from</p> <p>4 the top of my head.</p> <p>5 Q Was there anyone else that was at the 10:02AM</p> <p>6 meeting?</p> <p>7 A Yes.</p> <p>8 Q Who else?</p> <p>9 A Neema.</p> <p>10 Q Anyone else? 10:02AM</p> <p>11 A Marc.</p> <p>12 Q Anyone else?</p> <p>13 A Patrick.</p> <p>14 Q Is Patrick, what was his last name?</p> <p>15 A I don't, again, recall right now. 10:03AM</p> <p>16 Q Anybody else?</p> <p>17 A Met with Chaoren Li.</p> <p>18 Q Could you spell that for the record?</p> <p>19 A Yes, C-H-A-O-R-E-N, L-I.</p> <p>20 Q Who is Chaoren Li? 10:03AM</p> <p>21 A He is an engineer.</p> <p>22 Q Is he an engineer at Google?</p> <p>23 A Yes.</p> <p>24 Q What is his role at Google?</p> <p>25 A He is an engineer at YouTube. 10:04AM</p> <p style="text-align: right;">Page 36</p>
<p>1 deposition today. 10:01AM</p> <p>2 Let me first start by asking: Did you</p> <p>3 have any meetings in preparation for your deposition</p> <p>4 today?</p> <p>5 MR. KAPLAN: You can answer that yes or 10:01AM</p> <p>6 no.</p> <p>7 THE WITNESS: Yes.</p> <p>8 BY MR. BOYEA:</p> <p>9 Q When did those meetings take place?</p> <p>10 A Yesterday. 10:01AM</p> <p>11 Q Other than the meeting yesterday, did you</p> <p>12 have any other meeting in preparation for the</p> <p>13 deposition today?</p> <p>14 A No.</p> <p>15 Q How long was the meeting yesterday? 10:01AM</p> <p>16 A It was around eight hours.</p> <p>17 Q Who was present at that meeting?</p> <p>18 A Mishima was one of them.</p> <p>19 Q Anyone else?</p> <p>20 A Ruth. 10:01AM</p> <p>21 Q Who is Ruth?</p> <p>22 A She is a legal person from Google.</p> <p>23 Q So Google in-house; is that correct?</p> <p>24 A I don't know how to differentiate the terms.</p> <p>25 Q Is Ruth a lawyer? 10:02AM</p> <p style="text-align: right;">Page 35</p>	<p>1 Q Does he work on sender devices? 10:04AM</p> <p>2 A I don't know how to answer that. From the</p> <p>3 top of my head, I don't know.</p> <p>4 Q So you understand that Mr. Li works on</p> <p>5 YouTube, but you don't know if he works on sender 10:04AM</p> <p>6 devices. Is that fair?</p> <p>7 A I can't answer how much or little experience</p> <p>8 he has had on the sender side.</p> <p>9 Q Was there anybody else that was at the</p> <p>10 meeting? 10:04AM</p> <p>11 A Yes.</p> <p>12 Q Who?</p> <p>13 A Andreas.</p> <p>14 Q Can you spell that for the record?</p> <p>15 A A-N-D-R-E-A-S. 10:05AM</p> <p>16 Q Is that a first or last name?</p> <p>17 A I believe it's his first.</p> <p>18 Q Do you have a last name for Andreas?</p> <p>19 A No. Not from memory.</p> <p>20 Q And who is Andreas? 10:05AM</p> <p>21 A He's a YouTube engineer.</p> <p>22 Q Is there a specific subject matter within</p> <p>23 YouTube that Andreas deals with?</p> <p>24 A I know that he has at least worked on</p> <p>25 playlist service. 10:06AM</p> <p style="text-align: right;">Page 37</p>

<p>1 Q And what is playlist service? 10:06AM</p> <p>2 A It's a YouTube service that deals with</p> <p>3 playlists within YouTube.</p> <p>4 Q When you say "YouTube service," is that a</p> <p>5 cloud service? 10:06AM</p> <p>6 A Yes.</p> <p>7 Q Is the YouTube -- strike that.</p> <p>8 Is the playlist service used with all four</p> <p>9 of the YouTube apps?</p> <p>10 A I don't know. I don't know if all four use 10:06AM</p> <p>11 the C2 playlist service.</p> <p>12 Q Was there anybody else that was present at</p> <p>13 the meeting yesterday?</p> <p>14 A Not that I remember right now.</p> <p>15 Q Did you review any documents during the 10:07AM</p> <p>16 meeting?</p> <p>17 MR. KAPLAN: Object to form. I have to</p> <p>18 give a quick instruction on privilege here. I think</p> <p>19 the question is a little too broad.</p> <p>20 You can answer whether documents that you 10:07AM</p> <p>21 reviewed refreshed your recollection or taught you</p> <p>22 information subject to the 30(b)(6) topics.</p> <p>23 BY MR. BOYEA:</p> <p>24 Q Sorry, you cut out there.</p> <p>25 A Can you rephrase that question? 10:08AM</p> <p style="text-align: right;">Page 38</p>	<p>1 knowledge regarding a pixel device or the like 10:09AM</p> <p>2 receiving and playing a sequence of media items in</p> <p>3 connection with running one of the YouTube apps?</p> <p>4 A That can be -- that can be vague. If you</p> <p>5 can -- if you can refine the use case even more. 10:10AM</p> <p>6 Q Sure. You agree with me that any of the</p> <p>7 YouTube apps can run on a phone; correct?</p> <p>8 A What kind of phone, specifically?</p> <p>9 Q How about an Android phone? Are there</p> <p>10 Android phones that run the YouTube apps? 10:10AM</p> <p>11 A Yes.</p> <p>12 Q And are there iOS or Apple phones that run</p> <p>13 the YouTube apps?</p> <p>14 A Yes.</p> <p>15 Q So in that context, whether it's Android 10:10AM</p> <p>16 or iOS, are you familiar with how the YouTube app</p> <p>17 would run on the phone?</p> <p>18 A Sorry, that's still vague in terms of just</p> <p>19 YouTube app running on a phone.</p> <p>20 Q Let me strike it then. 10:11AM</p> <p>21 How about with respect to a user playing</p> <p>22 back YouTube content on an Android or iOS phone?</p> <p>23 A I have some knowledge.</p> <p>24 Q Okay. So let's start with do you agree</p> <p>25 with me that every device that can run a YouTube app 10:11AM</p> <p style="text-align: right;">Page 40</p>
<p>1 Q Yes. The question was: Did you review 10:08AM</p> <p>2 any documents during your meeting yesterday?</p> <p>3 MR. KAPLAN: And the instruction is you</p> <p>4 can answer with respect to documents that refreshed</p> <p>5 your recollection and with respect to any documents 10:08AM</p> <p>6 that may have prepared you on the topics and taught</p> <p>7 you information for those 30(b)(6) topics. Okay?</p> <p>8 THE WITNESS: I did not go over any</p> <p>9 documents that taught me new things.</p> <p>10 BY MR. BOYEA: 10:08AM</p> <p>11 Q Did you go over any documents that</p> <p>12 refreshed your recollection about the testimony that</p> <p>13 you would be giving today?</p> <p>14 A No.</p> <p>15 Q So I want to begin with talking about 10:08AM</p> <p>16 playing back YouTube at a sender device.</p> <p>17 Do you have knowledge regarding that</p> <p>18 subject matter?</p> <p>19 A Can you rephrase that question, please?</p> <p>20 Q Sure. One of the topics you're designated 10:09AM</p> <p>21 for is the design and operation of a computer such</p> <p>22 as a pixel device receiving and playing a sequence</p> <p>23 of media items in connection with, and it would be</p> <p>24 the four YouTube apps that we discussed previously.</p> <p>25 So what I'm asking is if you have 10:09AM</p> <p style="text-align: right;">Page 39</p>	<p>1 has a central processing unit? 10:11AM</p> <p>2 MR. KAPLAN: Object to form, scope.</p> <p>3 THE WITNESS: I don't really know like</p> <p>4 if -- that's a difficult question for me to just</p> <p>5 make a statement like that. 10:12AM</p> <p>6 BY MR. BOYEA:</p> <p>7 Q Let me ask it this way: Are you aware of</p> <p>8 any device that can run a YouTube app that does not</p> <p>9 have a central processing unit?</p> <p>10 MR. KAPLAN: Object to form and scope. 10:12AM</p> <p>11 THE WITNESS: I'm unaware of any.</p> <p>12 BY MR. BOYEA:</p> <p>13 Q Are you aware of any device that can run a</p> <p>14 YouTube app that does not have memory?</p> <p>15 MR. KAPLAN: Object to form and scope. 10:12AM</p> <p>16 THE WITNESS: Not that I can think of</p> <p>17 right now.</p> <p>18 BY MR. BOYEA:</p> <p>19 Q Are you aware of any device that can run a</p> <p>20 YouTube app that does not store a YouTube app 10:12AM</p> <p>21 software on that memory?</p> <p>22 MR. KAPLAN: Object to form and scope.</p> <p>23 THE WITNESS: Can you rephrase that?</p> <p>24 BY MR. BOYEA:</p> <p>25 Q Sure. Are you aware of any device that 10:13AM</p> <p style="text-align: right;">Page 41</p>



<p>1 Q Have you heard of a WiFi chipset? 10:19AM</p> <p>2 MR. KAPLAN: Object to scope. You can</p> <p>3 answer the question.</p> <p>4 THE WITNESS: WiFi chipset? Possibly.</p> <p>5 BY MR. BOYEA: 10:19AM</p> <p>6 Q Let me ask you this: For a sender device</p> <p>7 that's running the YouTube app, does that sender</p> <p>8 device connect to a WiFi network? Does it have that</p> <p>9 capability?</p> <p>10 MR. KAPLAN: Object to form. 10:19AM</p> <p>11 THE WITNESS: Can you repeat that</p> <p>12 question?</p> <p>13 BY MR. BOYEA:</p> <p>14 Q Sure. A sender device that's running a</p> <p>15 YouTube app, can that device connect to a WiFi 10:19AM</p> <p>16 network?</p> <p>17 A If that device has that capability.</p> <p>18 Q And what would give that device the</p> <p>19 capability to connect to a WiFi network?</p> <p>20 A Software support and hardware support. 10:20AM</p> <p>21 MR. KAPLAN: Object to scope.</p> <p>22 BY MR. BOYEA:</p> <p>23 Q What hardware support would it need to</p> <p>24 have to be able to connect to a WiFi network?</p> <p>25 MR. KAPLAN: Object to scope. 10:20AM</p> <p>Page 46</p>	<p>1 A user could select a single video to 10:22AM</p> <p>2 watch; correct?</p> <p>3 A I don't know what a user could do.</p> <p>4 Q So let me get -- this is your testimony,</p> <p>5 Mr. Mo, so I just want to make sure I'm 10:22AM</p> <p>6 understanding it.</p> <p>7 You're not sure if a user can select a</p> <p>8 single video for playback via the YouTube app; is</p> <p>9 that your testimony?</p> <p>10 MR. KAPLAN: Object to form, 10:22AM</p> <p>11 mischaracterizes testimony.</p> <p>12 THE WITNESS: No, what I meant was I would</p> <p>13 not know what a user may or may not do in a given --</p> <p>14 in a given situation.</p> <p>15 BY MR. BOYEA: 10:23AM</p> <p>16 Q I'm not asking you that. I'm asking that</p> <p>17 it's possible for a user to select a single video</p> <p>18 for playback through a YouTube app on a sender;</p> <p>19 right?</p> <p>20 MR. KAPLAN: Object to scope. 10:23AM</p> <p>21 THE WITNESS: I know that for the main app</p> <p>22 on mobile, that is a -- I believe that's the case,</p> <p>23 it's a supported case.</p> <p>24 BY MR. BOYEA:</p> <p>25 Q Mr. Mo, have you used the YouTube main app 10:23AM</p> <p>Page 48</p>
<p>1 THE WITNESS: Specifically I wouldn't be 10:20AM</p> <p>2 able to tell you other than WiFi hardware,</p> <p>3 WiFi-enabled hardware.</p> <p>4 BY MR. BOYEA:</p> <p>5 Q Are you aware of any sender device that 10:20AM</p> <p>6 can run a YouTube app that does not have</p> <p>7 WiFi-enabled hardware?</p> <p>8 MR. KAPLAN: Object to form.</p> <p>9 THE WITNESS: Not that I can think of.</p> <p>10 BY MR. BOYEA: 10:21AM</p> <p>11 Q In the context of the YouTube apps, do you</p> <p>12 agree with me that a user could select a single</p> <p>13 media item for playback at a sender device running</p> <p>14 any of the YouTube apps?</p> <p>15 A Please repeat that. 10:21AM</p> <p>16 Q So in the context of the YouTube apps,</p> <p>17 those allow a user to select a single media item for</p> <p>18 playback; correct?</p> <p>19 MR. KAPLAN: Object to form, scope.</p> <p>20 THE WITNESS: It's hard to say. It's -- 10:22AM</p> <p>21 BY MR. BOYEA:</p> <p>22 Q Why is it hard to say?</p> <p>23 A I would need more specifics.</p> <p>24 Q So let's start with a YouTube app running</p> <p>25 on a sender. Okay? 10:22AM</p> <p>Page 47</p>	<p>1 before? 10:23AM</p> <p>2 MR. KAPLAN: Object to scope.</p> <p>3 THE WITNESS: On select devices.</p> <p>4 BY MR. BOYEA:</p> <p>5 Q And have you used it on a sender device? 10:23AM</p> <p>6 MR. KAPLAN: Objection.</p> <p>7 THE WITNESS: I have used YouTube main app</p> <p>8 on an Android phone.</p> <p>9 BY MR. BOYEA:</p> <p>10 Q And have you played back video content on 10:24AM</p> <p>11 the Android phone while using the YouTube main app?</p> <p>12 A Yes, I have.</p> <p>13 Q In doing so, have you ever selected a</p> <p>14 single video for playback?</p> <p>15 MR. KAPLAN: Object to form and scope. 10:24AM</p> <p>16 THE WITNESS: I've played a video of</p> <p>17 interest.</p> <p>18 BY MR. BOYEA:</p> <p>19 Q I'm trying to get some basics here,</p> <p>20 Mr. Mo. That's what I'm asking is how a user 10:24AM</p> <p>21 actually can use one of these devices. I'm not</p> <p>22 asking you trick questions. I'm just trying to get</p> <p>23 some baseline terminology with you.</p> <p>24 Is it the case that for at least certain</p> <p>25 of the YouTube apps, it's possible to select a 10:24AM</p> <p>Page 49</p>

1 playlist of media items for playback? 10:24AM  
2 MR. KAPLAN: Object to scope.  
3 THE WITNESS: You asked if it's possible  
4 for which app?  
5 BY MR. BOYEA: 10:25AM  
6 Q Let's start with the YouTube main app.  
7 A Mm-hmm. Whether it's possible to play  
8 playlists?  
9 Q Correct.  
10 MR. KAPLAN: Object to scope. 10:25AM  
11 THE WITNESS: I believe -- yes, I believe  
12 that's possible.  
13 BY MR. BOYEA:  
14 Q And it's possible to play a playlist in  
15 YouTube Music; correct? 10:25AM  
16 MR. KAPLAN: Same objection.  
17 THE WITNESS: Can you define "playlist"  
18 exactly?  
19 BY MR. BOYEA:  
20 Q Have you -- does Google use the phrase 10:26AM  
21 "playlist" in the context of YouTube Music?  
22 A I -- I use playlist within that context.  
23 Q How do you use the term "playlist" in the  
24 context of YouTube Music?  
25 A It depends on the context of the 10:26AM  
Page 50

1 conversation. 10:26AM  
2 Q What does it depend on?  
3 MR. KAPLAN: Object to scope.  
4 THE WITNESS: Whether I'm talking about it  
5 from -- as like a user or something else. 10:26AM  
6 BY MR. BOYEA:  
7 Q Let's use that understanding. When you're  
8 using it in the context of from a user's  
9 perspective, is it possible to play a playlist in  
10 YouTube Music? 10:27AM  
11 A I don't believe so.  
12 Q And what about YouTube Kids, is it  
13 possible to select a playlist for playback?  
14 A I don't know actually.  
15 Q Okay. So in the context of the YouTube 10:27AM  
16 sender, have you heard the phrase "local queue"  
17 before?  
18 A In the context of -- I'm sorry, can you  
19 repeat that?  
20 Q In the context of a YouTube sender -- let 10:28AM  
21 me strike that.  
22 In the context of a sender running a  
23 YouTube app, have you heard the phrase "local queue"  
24 before?  
25 A Is there more specifics to that? 10:28AM  
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1 Q What other specifics would you need? 10:28AM  
2 A Just within the context of anything or --  
3 Q So in the context of the YouTube app  
4 playing back on the sender device, have you heard  
5 the phrase "local queue" before? 10:28AM  
6 A I've heard of it.  
7 Q And what is the local queue in that  
8 context?  
9 MR. KAPLAN: Object to form and scope.  
10 THE WITNESS: It depends on -- it's a very 10:29AM  
11 abstract term.  
12 BY MR. BOYEA:  
13 Q Well, your testimony is that you have  
14 heard the phrase "local queue" before in the context  
15 of the YouTube app playing back on the sender 10:29AM  
16 device.  
17 So I want to try to understand what your  
18 understanding is of that term in that context.  
19 MR. KAPLAN: Object to form,  
20 mischaracterizes testimony. 10:29AM  
21 THE WITNESS: I've heard of it with  
22 regards to just playing -- having a user have --  
23 being able to play things that they want on the  
24 phone.  
25  
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1 BY MR. BOYEA: 10:30AM  
2 Q Is a local queue stored on the phone in  
3 this context?  
4 MR. KAPLAN: Object to form.  
5 THE WITNESS: I don't know. 10:30AM  
6 BY MR. BOYEA:  
7 Q Let me ask you this: In the context of  
8 YouTube Music, are you familiar with the ability for  
9 a user to listen to music without an internet  
10 connection? 10:30AM  
11 A Yes, I have -- I'm aware of something like  
12 that.  
13 Q In that context where a user is playing  
14 back music without an internet connection, would  
15 there be a local queue on the phone? 10:31AM  
16 MR. KAPLAN: Object to form.  
17 THE WITNESS: I don't know whether it's  
18 called that or not. It's YouTube Music client  
19 specific.  
20 BY MR. BOYEA: 10:31AM  
21 Q Do you work on YouTube Music client  
22 specific code?  
23 A Depends on -- again, depends on the  
24 different clients aside from products itself.  
25 Q What do you mean depends on the different 10:31AM  
Page 53



<p>1 Q So under overview, it states, "The YouTube 10:47AM</p> <p>2 Music queue is primarily a client-side construct."</p> <p>3 Do you see that?</p> <p>4 A Can you repeat that?</p> <p>5 Q Under "Overview," do you see the first 10:47AM</p> <p>6 sentence of the document says, "The YouTube Music</p> <p>7 queue is primarily a client-side construct"?</p> <p>8 A Yes, I do see that.</p> <p>9 Q Do you have any reason to disagree with</p> <p>10 that statement? 10:47AM</p> <p>11 A I don't know other than I just see that's</p> <p>12 what it says.</p> <p>13 Q Do you have an understanding of what it</p> <p>14 means, "client-side construct"?</p> <p>15 A I can only interpret based on reading this. 10:48AM</p> <p>16 Q As Google's designee on the topics here, I</p> <p>17 would like to get Google's position on what a</p> <p>18 client-side construct means in this context.</p> <p>19 A I didn't write this, so I wouldn't be able</p> <p>20 to answer that. 10:48AM</p> <p>21 Q Okay. Do you know what -- do you see a</p> <p>22 little bit later, two sentences in it describes,</p> <p>23 "These renderers are served through</p> <p>24 GetMusicWatchNext."</p> <p>25 Are you familiar with what a renderer is? 10:48AM</p> <p>Page 58</p>	<p>1 playlist panel video renderer? 10:51AM</p> <p>2 A Without -- again, without knowing exactly</p> <p>3 where this came from, it's difficult for me to know</p> <p>4 what this is actually referring to.</p> <p>5 Q So as Google's designee, can you explain 10:51AM</p> <p>6 to me in this context what a renderer is without</p> <p>7 having additional information given to you?</p> <p>8 MR. KAPLAN: Object to form. You can</p> <p>9 answer.</p> <p>10 THE WITNESS: Again, with sort of the 10:52AM</p> <p>11 limited context of this and from my prior experience</p> <p>12 with working with renderers, it's a name -- it's a</p> <p>13 name that we give to, you know, information that's</p> <p>14 somewhere. It's just a naming convention.</p> <p>15 BY MR. BOYEA: 10:52AM</p> <p>16 Q Okay. So you see there is a statement</p> <p>17 that says, "These renderers are served through</p> <p>18 GetMusicWatchNext."</p> <p>19 What is GetMusicWatchNext?</p> <p>20 A Again, without knowing specifically what 10:53AM</p> <p>21 this is pointing to, I can't give an exact answer.</p> <p>22 Q Can you give any educated guess as</p> <p>23 Google's designee as to what GetMusicWatchNext means</p> <p>24 in --</p> <p>25 MR. KAPLAN: Object to form. But you can 10:53AM</p> <p>Page 60</p>
<p>1 A I've heard that term before. 10:48AM</p> <p>2 Q Can you explain to me what does that mean</p> <p>3 at Google, "renderer"?</p> <p>4 A It can mean many things within Google. I'll</p> <p>5 take that definition -- it depends on context again. 10:49AM</p> <p>6 Q In the context of YouTube Music and in</p> <p>7 this document, I'm trying to understand what this</p> <p>8 terminology means.</p> <p>9 So as Google's designee, can you explain</p> <p>10 to me what "renderer" means in the context of this 10:49AM</p> <p>11 document?</p> <p>12 A Let me read through this first.</p> <p>13 The first section I read.</p> <p>14 Q After reading the first section, can you</p> <p>15 give an explanation of what the phrase "renderer" 10:50AM</p> <p>16 means?</p> <p>17 A From reading this, this paragraph mentions</p> <p>18 "PlaylistPanelVideoRenderer." I'm assuming that</p> <p>19 "renderers" here refers to at least that. Yes.</p> <p>20 Q Can you explain to me what is a playlist 10:51AM</p> <p>21 panel video renderer then?</p> <p>22 A Is there -- without looking at the</p> <p>23 definition of that, I wouldn't be able to tell you</p> <p>24 other than it's a type of message.</p> <p>25 Q Where would I find the definition of 10:51AM</p> <p>Page 59</p>	<p>1 answer. 10:53AM</p> <p>2 THE WITNESS: I would assume that it's</p> <p>3 equivalent to the GetWatchNext request that exists</p> <p>4 for YouTube. And this is music-specific.</p> <p>5 BY MR. BOYEA: 10:53AM</p> <p>6 Q Can you explain to me what the</p> <p>7 GetWatchNext request is in the context of YouTube?</p> <p>8 A So, for -- yes, I can.</p> <p>9 Q Go ahead please.</p> <p>10 MR. KAPLAN: Object to form. 10:54AM</p> <p>11 THE WITNESS: Again, the client's example</p> <p>12 YouTube main app, watch next is a -- essentially</p> <p>13 it's what we call an InnerTube request. It's a</p> <p>14 cloud API that clients can make.</p> <p>15 BY MR. BOYEA: 10:54AM</p> <p>16 Q What is InnerTube?</p> <p>17 A It's a name that we've given to our YouTube</p> <p>18 back ends.</p> <p>19 Q Does InnerTube refer to a service or a</p> <p>20 server? 10:54AM</p> <p>21 A Loosely speaking, again, it's a name that we</p> <p>22 just use.</p> <p>23 Q It has to refer to something; right? You</p> <p>24 said, "It's a name given to our InnerTube back end."</p> <p>25 I guess what did you mean by that? 10:55AM</p> <p>Page 61</p>

<p>1 A I was just referring to the 10:55AM</p> <p>2 GetMusicWatchNext service.</p> <p>3 Q The GetMusicWatchNext service, is that</p> <p>4 provided by a cloud server?</p> <p>5 A It's a -- yes, it's a cloud request, so 10:55AM</p> <p>6 there is a server associated with it.</p> <p>7 Q We were talking about YouTube and I think</p> <p>8 you went to the GetMusicWatchNext service.</p> <p>9 So is there an equivalent watch next</p> <p>10 service in a YouTube context that would be different 10:56AM</p> <p>11 than the GetMusicWatchNext?</p> <p>12 MR. KAPLAN: Object to form.</p> <p>13 THE WITNESS: Can you repeat that?</p> <p>14 BY MR. BOYEA:</p> <p>15 Q Yes. So we were talking about YouTube 10:56AM</p> <p>16 specifically. Is there a watch next service that</p> <p>17 the YouTube service uses?</p> <p>18 A Yes, there is a GetWatchNext request made by</p> <p>19 YouTube.</p> <p>20 Q In the YouTube Music context, it would be 10:56AM</p> <p>21 a GetMusicWatchNext request; is that right?</p> <p>22 A From reading this document, that's what it's</p> <p>23 suggesting.</p> <p>24 Q Okay. So let's go back to the document.</p> <p>25 If you can go to the second page. 10:56AM</p> <p>Page 62</p>	<p>1 A No. 10:58AM</p> <p>2 Q So is that the end of your response?</p> <p>3 A I'm scanning the rest of the document to see</p> <p>4 if it provides more information.</p> <p>5 Q Maybe I'll ask a follow-up question. 10:59AM</p> <p>6 If you look a little bit further down in</p> <p>7 the document, there is a diagram.</p> <p>8 Do you see that with a client? And a</p> <p>9 GetMusicWatchNext and a GetMusicQueue box.</p> <p>10 Do you see that? 10:59AM</p> <p>11 A I do.</p> <p>12 Q And from the client, there are multiple</p> <p>13 arrows going to the GetMusicWatchNext and</p> <p>14 GetMusicQueue boxes.</p> <p>15 Do you see those? 10:59AM</p> <p>16 A Mm-hmm.</p> <p>17 Q And it says -- one of the arrows says,</p> <p>18 "Get queue renderers," the top arrow, "and currently</p> <p>19 playing song metadata on initial container</p> <p>20 playback." 10:59AM</p> <p>21 And then there is a following one that</p> <p>22 says, "Get queue renderers on queue continuations."</p> <p>23 Those are both going to the GetMusicWatchNext box.</p> <p>24 Do you see that?</p> <p>25 A I do see that. 11:00AM</p> <p>Page 64</p>
<p>1 A Okay. 10:57AM</p> <p>2 Q And the second paragraph starts, "The</p> <p>3 GetMusicWatchNext endpoint provides queue renderers</p> <p>4 when initiating playback on a new container, on</p> <p>5 queue continuation loads, and for the autoplay 10:57AM</p> <p>6 section of the queue."</p> <p>7 Do you see that?</p> <p>8 A Yes, I do see that.</p> <p>9 Q So I want to ask you some questions on the</p> <p>10 terminology here so I have an understanding of what 10:57AM</p> <p>11 this means.</p> <p>12 So here it now says there is an end point</p> <p>13 that provides queue renderers. Does this give you</p> <p>14 any more context as to what the phrase "renderer"</p> <p>15 means here? 10:57AM</p> <p>16 MR. KAPLAN: Object to form.</p> <p>17 THE WITNESS: Nothing other than what I</p> <p>18 said earlier.</p> <p>19 BY MR. BOYEA:</p> <p>20 Q So it's just a reference to some sort of 10:58AM</p> <p>21 information; is that right?</p> <p>22 A That's what would I interpret from reading</p> <p>23 this.</p> <p>24 Q Okay. Do you have an understanding of</p> <p>25 what "queue continuation" means? 10:58AM</p> <p>Page 63</p>	<p>1 Q Is it fair to say that the client is 11:00AM</p> <p>2 receiving queue renderers from the GetMusicWatchNext</p> <p>3 service?</p> <p>4 A From this diagram, it suggests that based on</p> <p>5 this diagram, but I also don't see a return arrow. 11:00AM</p> <p>6 Q Separate and aside from this document, are</p> <p>7 you -- have you had any experience with the</p> <p>8 GetMusicWatchNext service?</p> <p>9 A No, I haven't had any experience other than</p> <p>10 I think I'm aware of it. Yes. 11:01AM</p> <p>11 Q Okay. So you might not have information</p> <p>12 for me on this, but let me ask the last question</p> <p>13 from that statement you're looking at above. There</p> <p>14 is a reference to "the autoplay section of the</p> <p>15 queue." 11:01AM</p> <p>16 Can you -- do you have an understanding of</p> <p>17 what that means, "the autoplay section of the</p> <p>18 queue"?</p> <p>19 A Sorry, which part are you referring to?</p> <p>20 Q If you go up to the second paragraph, the 11:01AM</p> <p>21 GetMusicWatchNext sentence that we looked at, the</p> <p>22 very end of the sentence it refers to "the autoplay</p> <p>23 section of the queue."</p> <p>24 A Okay. I see it.</p> <p>25 Q Can you explain to me what the autoplay 11:01AM</p> <p>Page 65</p>

<p>1 section of the queue means? 11:01AM</p> <p>2 A I wouldn't be able to tell you. Again, I</p> <p>3 didn't write this document and short of that being</p> <p>4 described here, I can't tell you.</p> <p>5 Q Well, let's look back down at the diagram. 11:02AM</p> <p>6 There is the third arrow that says, "Get queue</p> <p>7 renderers for autoplay."</p> <p>8 Does that give you any other context as to</p> <p>9 what this might mean?</p> <p>10 A I mean, based on this, it's getting queue 11:02AM</p> <p>11 renderers for autoplay. I don't know what that --</p> <p>12 again, short of -- I did not write this, so short of</p> <p>13 just guessing, I don't know.</p> <p>14 Q Well, Mr. Mo, you're Google's designee</p> <p>15 here and I can read these words and I can try to 11:02AM</p> <p>16 figure out what it means, but you're the one in the</p> <p>17 position to tell me what it means to Google. So I'm</p> <p>18 trying to get your best estimation of what this is</p> <p>19 referring to.</p> <p>20 Are you able to give any testimony on 11:03AM</p> <p>21 behalf of Google here as to what the autoplay</p> <p>22 reference in this document is referring to?</p> <p>23 A No, I'm not.</p> <p>24 MR. KAPLAN: Object to form.</p> <p>25 THE WITNESS: Again, not for this 11:03AM</p> <p>Page 66</p>	<p>1 like it could be. 11:05AM</p> <p>2 Q And to be clear, I'll just let you know</p> <p>3 that any document that has the GOOG-SONOS starting</p> <p>4 in the Bates number on the bottom right corner,</p> <p>5 that's a document that Google has produced to Sonos 11:05AM</p> <p>6 in this case.</p> <p>7 So I'm going to have you go to the fifth</p> <p>8 page of the document and you should see a diagram</p> <p>9 that says, "GetMusicWatchNext Call Flow."</p> <p>10 Let me know once you're there. 11:06AM</p> <p>11 A Is that Page 5?</p> <p>12 Q It should be Page 5 of the document and</p> <p>13 there should be a blue box at the top of the</p> <p>14 diagram.</p> <p>15 A I'm on that page. 11:07AM</p> <p>16 Q It says, "This sequence diagram represents</p> <p>17 a typical set of calls to GetMusicWatchNext when</p> <p>18 initiating playback on a long playlist."</p> <p>19 Are you familiar with initiating playback</p> <p>20 on a long playlist in YouTube Music, how that would 11:07AM</p> <p>21 be accomplished on a sender?</p> <p>22 MR. KAPLAN: Object to form. You can</p> <p>23 answer.</p> <p>24 THE WITNESS: Can you rephrase your</p> <p>25 question? 11:07AM</p> <p>Page 68</p>
<p>1 specific -- this document and for the -- this queue 11:03AM</p> <p>2 renderers for autoplay that you've asked for.</p> <p>3 BY MR. BOYEA:</p> <p>4 Q Maybe there is another document that might</p> <p>5 give a little bit more context. 11:04AM</p> <p>6 MR. BOYEA: Jae is going to be introducing</p> <p>7 what is going to be labeled as Mo Exhibit 4.</p> <p>8 (Exhibit 4 was marked for identification.)</p> <p>9 MR. BOYEA: That should be coming through.</p> <p>10 For the record, what has been marked for 11:04AM</p> <p>11 identification as Mo Exhibit 4 is a copy of a</p> <p>12 document titled "Server" and has a starting Bates</p> <p>13 number of GOOG-SONOSWDTX-00039785.</p> <p>14 Q Mr. Mo, let me know once you have that</p> <p>15 opened up. 11:04AM</p> <p>16 A I have it open.</p> <p>17 Q This appears to be another page from the</p> <p>18 same location as the last document we were looking</p> <p>19 at. You see again it says, "Reviewed by davidjn" at</p> <p>20 the top? 11:05AM</p> <p>21 A Yes, I see that.</p> <p>22 Q Davidjn is a reference to David Nicholson,</p> <p>23 a Google employee; correct?</p> <p>24 A That, again, looks familiar to me. Yes, I</p> <p>25 think -- without knowing the source of this, it looks 11:05AM</p> <p>Page 67</p>	<p>1 BY MR. BOYEA: 11:07AM</p> <p>2 Q Are you familiar with how a YouTube sender</p> <p>3 would initiate playback on a long playlist?</p> <p>4 MR. KAPLAN: Same objection. You can</p> <p>5 answer that. 11:07AM</p> <p>6 THE WITNESS: No, I'm not.</p> <p>7 BY MR. BOYEA:</p> <p>8 Q On this diagram it looks like the client</p> <p>9 makes some calls similar to what we were seeing in</p> <p>10 the last document, but here it looks like there's 11:08AM</p> <p>11 some return messages from the GetMusicWatchNext</p> <p>12 service; is that fair?</p> <p>13 A That's what I see from the diagram.</p> <p>14 Q It says, "Initial page load, first 25</p> <p>15 queue elements." 11:08AM</p> <p>16 There's another one that says, "Load next</p> <p>17 50 queue elements."</p> <p>18 The very last one says, "Load autoplay</p> <p>19 section of the queue."</p> <p>20 Do you see that? 11:08AM</p> <p>21 A Yes, I do see that.</p> <p>22 Q Now, would you agree that this diagram is</p> <p>23 showing that the YouTube client would be only</p> <p>24 loading a portion of the queue at a time?</p> <p>25 A The diagram shows that -- just reading the 11:09AM</p> <p>Page 69</p>

<p>1 diagram, it says it's loading the first 25 queue 11:09AM</p> <p>2 elements.</p> <p>3 Q So is that a yes or no to my question?</p> <p>4 MR. KAPLAN: Object to form.</p> <p>5 THE WITNESS: Again, it's -- your question 11:09AM</p> <p>6 was around whether the music client -- can you</p> <p>7 repeat your question again?</p> <p>8 BY MR. BOYEA:</p> <p>9 Q Sure. Is this diagram showing that the</p> <p>10 YouTube client might load its queue in segments? 11:09AM</p> <p>11 A That's really vague, I would say no.</p> <p>12 YouTube client again, are you referring to</p> <p>13 a specific one?</p> <p>14 Q Well, I'm referring to the document and</p> <p>15 the diagram. It says "Client"; correct? 11:10AM</p> <p>16 A That's what the diagram says.</p> <p>17 Q There's no specificity as to what</p> <p>18 particular client is being called out in this</p> <p>19 diagram; right?</p> <p>20 A Again, that's what -- the diagram shows 11:10AM</p> <p>21 client.</p> <p>22 Q I'm asking in the context of this diagram,</p> <p>23 is it fair to say that this shows that the client is</p> <p>24 going to load the queue elements into its queue in</p> <p>25 different segments at a time? 11:10AM</p> <p>Page 70</p>	<p>1 autoplay section in it? 11:12AM</p> <p>2 A What is the context -- are you still talking</p> <p>3 about the context of this document in terms of queue?</p> <p>4 Q Yes, let's use this document and it's a</p> <p>5 YouTube Music specific document. 11:12AM</p> <p>6 In the context of the YouTube Music</p> <p>7 service, are you familiar with a queue -- an</p> <p>8 autoplay section of a queue?</p> <p>9 A No, I'm not familiar with that. If you can</p> <p>10 provide -- sorry, go ahead. 11:13AM</p> <p>11 Q Go ahead.</p> <p>12 A I was going to say if you can provide more</p> <p>13 concrete examples.</p> <p>14 Q Hopefully this will help. I'm going to</p> <p>15 introduce another exhibit. Maybe this will give you 11:13AM</p> <p>16 a little bit more concrete substance here.</p> <p>17 MR. BOYEA: Jae is going to identify an</p> <p>18 exhibit that's going to be identified as Mo</p> <p>19 Exhibit 5.</p> <p>20 (Exhibit 5 was marked for identification.) 11:13AM</p> <p>21 BY MR. BOYEA:</p> <p>22 Q Before that comes through, Mr. Mo, do you</p> <p>23 understand that when a YouTube sender is playing</p> <p>24 media, that it can play back through a sequence of</p> <p>25 media items at a given time? 11:14AM</p> <p>Page 72</p>
<p>1 MR. KAPLAN: Object to form. But you can 11:11AM</p> <p>2 answer.</p> <p>3 THE WITNESS: I don't know. It goes back</p> <p>4 to this is what the diagram shows.</p> <p>5 BY MR. BOYEA: 11:11AM</p> <p>6 Q And again, you're Google's designee here.</p> <p>7 So I just want to make sure this is Google's</p> <p>8 testimony.</p> <p>9 So you can't give me an answer one way or</p> <p>10 the other? 11:11AM</p> <p>11 MR. KAPLAN: Objection to form, misstates</p> <p>12 testimony.</p> <p>13 THE WITNESS: I did not write this</p> <p>14 document.</p> <p>15 BY MR. BOYEA: 11:11AM</p> <p>16 Q Do you have any idea what the "load</p> <p>17 autoplay section of the queue" arrow means at the</p> <p>18 very bottom of the diagram?</p> <p>19 A Are you asking me if I --</p> <p>20 Q Could you explain to me what that is a 11:12AM</p> <p>21 reference to?</p> <p>22 A I'll have to read this document to see what</p> <p>23 it's -- why it's there.</p> <p>24 Q Let me ask you more generally.</p> <p>25 Are you familiar with a queue having an 11:12AM</p> <p>Page 71</p>	<p>1 MR. KAPLAN: Object to form. 11:14AM</p> <p>2 THE WITNESS: Can you repeat that?</p> <p>3 BY MR. BOYEA:</p> <p>4 Q Sure. When a YouTube sender is playing</p> <p>5 back media, you understand that it can play back 11:14AM</p> <p>6 through a sequence of media items; right?</p> <p>7 MR. KAPLAN: Object to form.</p> <p>8 THE WITNESS: Can you give a more concrete</p> <p>9 example?</p> <p>10 BY MR. BOYEA: 11:14AM</p> <p>11 Q Why don't you go ahead and open Mo</p> <p>12 Exhibit 5 now.</p> <p>13 Let me know once you have that up.</p> <p>14 A Yes.</p> <p>15 Q These are screenshots that were captured 11:15AM</p> <p>16 this weekend on a pixel device running the different</p> <p>17 YouTube apps.</p> <p>18 I would like to ask you some questions</p> <p>19 here. Hopefully this will give you a little bit</p> <p>20 more context. 11:15AM</p> <p>21 So the first screenshot labeled</p> <p>22 "Screenshot Number 1", does that look familiar to</p> <p>23 you, the GUI at least look familiar to you?</p> <p>24 MR. KAPLAN: Object to form and</p> <p>25 authenticity. 11:15AM</p> <p>Page 73</p>

<p>1 THE WITNESS: I've seen something similar 11:15AM 2 to it. 3 BY MR. BOYEA: 4 Q You agree with me that this is a 5 YouTube -- a screenshot of a YouTube main app; 11:15AM 6 right? 7 A Again, without knowing the source of the 8 screenshot, it's hard to say whether it's from a 9 natural YouTube app or not. 10 Q I'll represent that this was captured on 11:15AM 11 the pixel device running the YouTube main app. And 12 so I want to ask you some questions here. 13 So you see in the upper -- not all the way 14 to the upper right corner of Screenshot 1, but that 15 there is an icon that has "cc" in it? 11:16AM 16 A Yes, I see that. 17 Q Then to the left of that there is what I 18 believe is referred to as the cast icon; correct? 19 A It looks like one, yes. 20 Q Then to the left of that is another icon 11:16AM 21 with -- looks to be like a play -- a circle around 22 like a play icon. 23 Do you see that? 24 MR. KAPLAN: Object to form. 25 THE WITNESS: I see -- yes, I see another 11:16AM Page 74</p>	<p>1 Q Do you have an understanding of what 11:18AM 2 "Autoplay is on" is referring to in the YouTube Kids 3 context? 4 A I cannot say definitively. 5 Q Does YouTube Kids refer to autoplay in any 11:18AM 6 other context other than it being a recommendation 7 of a video after the current video finishes? 8 A Again, it depends on context. It could be 9 different things just from experience. 10 Q In this context shown in Screenshot 11:18AM 11 Number 2, you can't tell me what "Autoplay is on" is 12 referring to? 13 MR. KAPLAN: Object to form. But you can 14 answer. 15 THE WITNESS: I can only guess what it's 11:19AM 16 for. 17 BY MR. BOYEA: 18 Q Well, as Google's 30(b)(6) designee, can 19 you give me an educated guess as to what you think 20 this is for? 11:19AM 21 MR. KAPLAN: Object to form. But you can 22 answer. 23 THE WITNESS: Again, this is outside of 24 the context of casting, so my guess is that it could 25 be similar to what is shown above in the main app. 11:19AM Page 76</p>
<p>1 icon, it's to the other cast like icon. 11:16AM 2 BY MR. BOYEA: 3 Q Are you familiar with what the icon next 4 to the cast icon is used for? 5 A As a user, I believe from experience, yes. 11:17AM 6 Q What is it used for then? 7 A To enable recommendations when the current 8 video finishes. 9 Q Is that the same thing as the feature that 10 Google refers to as autoplay? 11:17AM 11 MR. KAPLAN: Object to form. But you can 12 answer. 13 THE WITNESS: That term is actually 14 overloaded. So maybe if you can provide a more 15 concrete definition of "autoplay." 11:17AM 16 BY MR. BOYEA: 17 Q Well, I'm asking how Google uses that 18 terminology. So you can see below in Screenshot 19 Number 2, I'll represent that this is a screenshot 20 that was taken using the YouTube Kids app on a pixel 11:17AM 21 device. 22 You see right in the middle it says, 23 "Autoplay is on." 24 Do you see that? 25 A I do see that. 11:18AM Page 75</p>	<p>1 that it would enable recommendations for when the 11:19AM 2 current video ends. 3 BY MR. BOYEA: 4 Q Now, you've referred to recommendations. 5 Where do these recommendations come from? 11:20AM 6 A I'm not an expert in recommendations on 7 YouTube. They come from essentially a service. 8 That's one way to get recommendations. 9 Q When you say "a service," is that a cloud 10 service? 11:20AM 11 A That could be one. 12 Q In the context of YouTube, do you know 13 what cloud service provides recommendations? 14 A I don't know all of them. 15 Q Do you know any of them? 11:20AM 16 A Again, I believe GetWatchNext contains -- 17 can contain recommendations. 18 Q Do you know if GetWatchNext can be used 19 with YouTube Kids as well to provide 20 recommendations? 11:21AM 21 A I don't know. It really depends on various 22 factors. I just know that it can. It doesn't mean 23 that it does. 24 Q If you scroll to the second page of this 25 document, there are two screenshots labeled 11:21AM Page 77</p>



## HIGHLY CONFIDENTIAL - SOURCE CODE

<p>1 Screenshot 3 and Screenshot 4. I'll represent that 11:21AM</p> <p>2 these were screenshots taken on a pixel device</p> <p>3 running the YouTube Music app.</p> <p>4 Do you see in Screenshot Number 4, Mr. Mo,</p> <p>5 there is an autoplay banner about a little more than 11:21AM</p> <p>6 halfway above -- between the halfway point of this</p> <p>7 screenshot.</p> <p>8 Do you see that?</p> <p>9 A Yes, I see that.</p> <p>10 Q Are you familiar with how the section of 11:22AM</p> <p>11 this screen is populated below the autoplay section?</p> <p>12 A No, I'm not.</p> <p>13 Q Do you have any knowledge of whether the</p> <p>14 autoplay section gets populated by a watch next</p> <p>15 service? 11:22AM</p> <p>16 A I don't know in this case.</p> <p>17 Q Who at Google would you go ask if you</p> <p>18 wanted to find the answer to that question? Do you</p> <p>19 have anybody in mind?</p> <p>20 A No, I would -- someone on the YouTube Music 11:23AM</p> <p>21 team.</p> <p>22 Q And who would you at the YouTube Music</p> <p>23 team start with if you were trying to find the</p> <p>24 answer to that question?</p> <p>25 A I don't have a person off the top of my mind 11:23AM</p> <p style="text-align: right;">Page 78</p>	<p>1 For the record, this is a document titled 11:25AM</p> <p>2 "Cast" and the first Bates number is</p> <p>3 GOOG-SONOSWDTX-000 39484.</p> <p>4 Q Let me know when you have that open,</p> <p>5 Mr. Mo. 11:25AM</p> <p>6 A Yes, I have it open.</p> <p>7 Q Have you seen this document before?</p> <p>8 A It looks familiar. I can't say for sure</p> <p>9 whether I've seen this specific one or not.</p> <p>10 Q But you've seen documents like this? 11:26AM</p> <p>11 A I've seen documents that has similar</p> <p>12 content.</p> <p>13 Q And where would you have seen documents</p> <p>14 like this?</p> <p>15 A I'm looking at the left side, it's a -- 11:26AM</p> <p>16 essentially it's a team site.</p> <p>17 Q Do you have access to this team site?</p> <p>18 A Again, I don't know. It looks like it. It</p> <p>19 looks like this document could come from it. I</p> <p>20 have -- 11:27AM</p> <p>21 Q Yes, go ahead.</p> <p>22 A And I have had access to the team site</p> <p>23 before.</p> <p>24 Q This is a team site that's internal to</p> <p>25 Google; correct? 11:27AM</p> <p style="text-align: right;">Page 80</p>
<p>1 setting here. 11:23AM</p> <p>2 Q Is there a team lead over in the YouTube</p> <p>3 Music team -- I guess. Let me strike that.</p> <p>4 Is there a leader of the YouTube Music</p> <p>5 team that you would go to? 11:23AM</p> <p>6 A I don't know who that person would be.</p> <p>7 Q All right. So if you scroll to the third</p> <p>8 page of this document, there is a screenshot labeled</p> <p>9 Screenshot Number 5. And I'll represent to you that</p> <p>10 this is a screenshot that was captured on a pixel 11:24AM</p> <p>11 device running the YouTube TV app.</p> <p>12 Do you see below the halfway point of the</p> <p>13 screenshot, there is an "Up Next" section there?</p> <p>14 A Yes, I see that.</p> <p>15 Q Do you have an understanding of where the 11:24AM</p> <p>16 "Up Next" information comes from?</p> <p>17 A No, I don't have that knowledge.</p> <p>18 Q Okay. So let's shift gears a little bit</p> <p>19 here and talk about -- we'll get another document</p> <p>20 introduced here. 11:24AM</p> <p>21 MR. BOYEA: This will be marked for</p> <p>22 identification purposes as Mo Exhibit 6.</p> <p>23 (Exhibit 6 was marked for identification.)</p> <p>24 MR. BOYEA: That should be coming through</p> <p>25 now, Mr. Mo. Go ahead and take a look at that. 11:25AM</p> <p style="text-align: right;">Page 79</p>	<p>1 A Yes, it would be. 11:27AM</p> <p>2 Q All right. So do you have a general</p> <p>3 understanding of what the context of this document</p> <p>4 is?</p> <p>5 I'll ask a better question. Let me strike 11:27AM</p> <p>6 that.</p> <p>7 Do you have a general understanding of the</p> <p>8 subject matter of this document titled "Cast"?</p> <p>9 A Can you give me a few moments to read</p> <p>10 through this? 11:27AM</p> <p>11 Q Yes, sure.</p> <p>12 Now that you have had a chance to read</p> <p>13 through it, do you have an understanding of the</p> <p>14 general subject matter of this document?</p> <p>15 A Yes, I do in general, a general level. 11:29AM</p> <p>16 Q And what is your general understanding of</p> <p>17 the subject matter?</p> <p>18 MR. KAPLAN: Object to form. But you can</p> <p>19 answer.</p> <p>20 THE WITNESS: Just a high level of what 11:29AM</p> <p>21 he's talking about here in this doc.</p> <p>22 BY MR. BOYEA:</p> <p>23 Q And what is that?</p> <p>24 A Discovery, launch and connect flows.</p> <p>25 Q Perfect. That's what I want to get into. 11:29AM</p> <p style="text-align: right;">Page 81</p>



<p>1 contains things like the receiver app URL that's 12:59PM 2 listed in the table below. 3 Q That was super helpful. Maybe let me just 4 unpack that a little bit. 5 So you're referring to a cast app ID. Is 12:59PM 6 that sent by the sender in a message to the cast 7 receiver? 8 A When you say sent it, you mean literally 9 from the sender to the receiver device? 10 Q Correct, as in transmit. 1:00PM 11 A It's possible that that information is 12 sent -- again, there's like multiple layers to this. 13 You can think of YouTube as the application layer and 14 then the cast SDK provides the -- you can maybe just 15 say that as the cast platform layer. 1:00PM 16 So if you can clarify which layer you're 17 referring to? 18 Q Well, let's stay at a higher level here. 19 So the cast sender is on one physical device, right, 20 a phone; correct? 1:00PM 21 A Yes. 22 Q And the cast SDK and cast receiver is on a 23 separate physical device cast receiver; right? 24 A To be clear, the cast SDK can be on -- there 25 is like a sender cast SDK and also a receiver cast 1:00PM Page 106</p>	<p>1 actually. 1:02PM 2 But you can imagine there's some sort of 3 request being sent. 4 Q So as Google's 30(b)(6) designee here, I 5 need your best answer to this that I can get. 1:02PM 6 So is it the case that the sender device 7 sends an instruction to the receiver over WiFi that 8 tells the receiver to launch a specific YouTube app? 9 MR. KAPLAN: Objection to form. You can 10 answer. 1:03PM 11 THE WITNESS: There are cases where sender 12 will -- there will be messages at some layer at the 13 cast layer that will result in a cast app launch on 14 the receiver side. 15 THE REPORTER: In a cast what? That will 1:03PM 16 result in a what? 17 THE WITNESS: A cast receiver app launch. 18 BY MR. BOYEA: 19 Q And you don't -- sitting here today, you 20 can't tell me if that message goes over WiFi or not? 1:03PM 21 A There are cases where it would go over the 22 wireless network. 23 Q Are there cases where it would not go over 24 the wireless network, it would go over something 25 else conceivably? 1:03PM Page 108</p>
<p>1 SDK. 1:00PM 2 Q So in the context of this diagram where it 3 shows a blue cast SDK that is outlined around the 4 cast receiver app, I'm asking in this context. I 5 believe this means this cast SDK cast receiver app 1:01PM 6 is on the cast receiver device; correct? 7 A Yes, in that box, yes. 8 Q So let's live in that world then. 9 So we have two physically distinct 10 devices; correct? 1:01PM 11 A Yes. 12 Q And so for Number 2, "Launch YouTube app," 13 is there a message and that gets sent over WiFi from 14 the sender device to the receiver device? 15 A As part of the launch process, yes, there 1:01PM 16 are messages being passed between senders. 17 Q Go ahead and finish there. 18 A I was just clarifying that there are 19 messages being passed between sender and receiver. 20 Q So specifically I'm curious as to what 1:02PM 21 actually is being sent that causes the cast receiver 22 to launch the app as you kind of described before. 23 Is that a, quote/unquote, launch message? 24 A That is actually abstracted out by the cast 25 platform. So the specific message I don't know 1:02PM Page 107</p>	<p>1 A Conceivably, because I do know that casts -- 1:03PM 2 the cast SDK supports like Bluetooth, which I'm 3 actually less familiar with. 4 Q Are you familiar -- to your knowledge, 5 does a cast sender app send a launch instruction 1:04PM 6 over Bluetooth in any circumstances? 7 A I don't know. 8 Q As -- 9 A Sorry, for YouTube, I think we've actually 10 disabled that. 1:04PM 11 Q Okay. So as Google's 30(b)(6) witness 12 here, is it your understanding that a YouTube sender 13 is going to send an instruction to the receiver to 14 launch a given YouTube app over WiFi? 15 A Yes, YouTube will via the cast SDK. Again, 1:04PM 16 that's something that is abstracted out by the cast 17 SDK, but something does get sent over the network if 18 the sender is on the WiFi network. 19 Q And that applies for all four of the 20 YouTube apps; correct? 1:05PM 21 A Yes, that can apply to all four. 22 Q And that applies regardless of whether 23 it's an iOS versus an Android YouTube app; correct? 24 A Yes, for -- for the cast receiver. Sorry, 25 for the Google cast hardware. 1:05PM Page 109</p>

<p>1 receiver client. 1:19PM</p> <p>2 Q And what would be the contents of the set</p> <p>3 playlist message being sent to the receiver client?</p> <p>4 A The content may -- the message may</p> <p>5 contain -- I know it contains fields such as video, 1:19PM</p> <p>6 video ID, playlist ID. Those are the ones I know off</p> <p>7 the top of my head.</p> <p>8 Q The video ID field, will that contain the</p> <p>9 same video ID that was in the set playlist message</p> <p>10 sent from the sender to the MDx server? 1:20PM</p> <p>11 A It could be. It could be the same.</p> <p>12 Q In what circumstance would it not be the</p> <p>13 same?</p> <p>14 A I can't think of one right now.</p> <p>15 Q In response to receiving the set playlist 1:20PM</p> <p>16 message, does the cast -- let me strike that.</p> <p>17 In response to receiving the set playlist</p> <p>18 message, does the MDx session server have a queue in</p> <p>19 the cloud that it references?</p> <p>20 MR. KAPLAN: Object to form. 1:21PM</p> <p>21 THE WITNESS: Can you clarify further what</p> <p>22 do you mean by "queue"? Is there a specific</p> <p>23 meaning?</p> <p>24 BY MR. BOYEA:</p> <p>25 Q Sure. Have you heard in the context of 1:21PM</p> <p style="text-align: right;">Page 118</p>	<p>1 service -- again, it's kind of used it to -- to be 1:23PM</p> <p>2 this data source for -- for this shared queue.</p> <p>3 The session server also maintains its own</p> <p>4 copy of the content of the shared queue in memory.</p> <p>5 Q You're referring to a playlist service and 1:24PM</p> <p>6 so I want to ask you some questions about that.</p> <p>7 Can you describe for me, what is the --</p> <p>8 what is that service at a high level?</p> <p>9 A At a high level, that's -- you can think of</p> <p>10 service as a piece of infrastructure that is sort 1:24PM</p> <p>11 of -- the dedicated purpose is around providing</p> <p>12 playlist functionality. So this playlist service</p> <p>13 provides API, for example, for an MDx server to create</p> <p>14 a natural playlist and to update its playlist content.</p> <p>15 Q Does the playlist service -- let me strike 1:25PM</p> <p>16 that.</p> <p>17 Is the watch next service related to the</p> <p>18 playlist service in any way?</p> <p>19 A By "related," the watch next service could</p> <p>20 use playlist service, it could make calls into the 1:25PM</p> <p>21 playlist service.</p> <p>22 Q Cost the playlist service make calls into</p> <p>23 the watch next service?</p> <p>24 A I don't know.</p> <p>25 Q Does the MDx session server make calls 1:26PM</p> <p style="text-align: right;">Page 120</p>
<p>1 MDx of an MDx queue? 1:21PM</p> <p>2 A Not in those terms.</p> <p>3 Q What about a shared queue?</p> <p>4 A Yes, I'm familiar with shared queue.</p> <p>5 Q What is a shared queue in the MDx context? 1:21PM</p> <p>6 A A shared queue is something that I refer to</p> <p>7 and generally the MDx team refer to as a -- it's a</p> <p>8 YouTube playlist that has a special playlist name that</p> <p>9 is used to store videos or songs, to hold songs or</p> <p>10 videos that is to be played on the receiver device. 1:22PM</p> <p>11 And they support multiuser scenarios.</p> <p>12 Q Where does the shared queue exist?</p> <p>13 A "Shared queue" can be a little bit of a</p> <p>14 loose term. In some cases we kind of just refer to</p> <p>15 that as the playlist. So there's the playlist service 1:23PM</p> <p>16 that actually holds the playlist associated with the</p> <p>17 shared queue.</p> <p>18 And then there's also -- the session</p> <p>19 server also has this state that contains the videos</p> <p>20 and songs or whatever that are in the shared queue. 1:23PM</p> <p>21 Q So how does the shared queue get populated</p> <p>22 with songs or videos?</p> <p>23 A So in one scenario, the session server will</p> <p>24 do that when it receives a set playlist message from</p> <p>25 the sender. And it will call into YouTube playlist 1:23PM</p> <p style="text-align: right;">Page 119</p>	<p>1 into the watch next service? 1:26PM</p> <p>2 A No, it does not.</p> <p>3 Q Does the MDx -- let me strike that.</p> <p>4 Does the shared queue -- we talked earlier</p> <p>5 about recommended media items in the context of a 1:26PM</p> <p>6 YouTube app. Do you remember that?</p> <p>7 A Yes, I vaguely remember that.</p> <p>8 Q Does the shared queue contain any</p> <p>9 recommended media items in the context of a YouTube</p> <p>10 cast session? 1:26PM</p> <p>11 MR. KAPLAN: Object to form.</p> <p>12 THE WITNESS: It's a little bit hard to</p> <p>13 answer that. What do you mean specifically by</p> <p>14 "recommended content"?</p> <p>15 BY MR. BOYEA: 1:27PM</p> <p>16 Q Well, earlier when we were talking about</p> <p>17 recommending content, it was shown in the context of</p> <p>18 that autoplay feature.</p> <p>19 Do you remember that?</p> <p>20 A Yes, there were a couple of screenshots. 1:27PM</p> <p>21 Q Yeah. So would the shared queue include</p> <p>22 any autoplay videos or songs?</p> <p>23 A I don't believe it does.</p> <p>24 Q Let me ask you a specific use case then.</p> <p>25 If a user is forecasting in YouTube Music 1:27PM</p> <p style="text-align: right;">Page 121</p>

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<p>1 and wants to listen to an album -- are you following 1:27PM</p> <p>2 me so far?</p> <p>3 A This is on the sender side this is happening</p> <p>4 on?</p> <p>5 Q Yes, on the sender side. So if they want 1:28PM</p> <p>6 to listen to an album, are you familiar with the</p> <p>7 album appearing in the up next panel?</p> <p>8 A No. Can you clarify some more?</p> <p>9 Q Let me see if we have an example. Let me</p> <p>10 see. We're going to introduce another exhibit. 1:29PM</p> <p>11 Hopefully this can give you a little bit more</p> <p>12 context.</p> <p>13 MR. BOYEA: Jae just added to the shared</p> <p>14 folder what we marked as Mo Exhibit 7.</p> <p>15 (Exhibit 7 was marked for identification.) 1:29PM</p> <p>16 MR. BOYEA: Let me know once you have</p> <p>17 that.</p> <p>18 For the record, this is a screenshot that</p> <p>19 was recently captured on a pixel device of the</p> <p>20 YouTube app. 1:29PM</p> <p>21 THE WITNESS: I have it open.</p> <p>22 BY MR. BOYEA:</p> <p>23 Q Okay. And so, Mr. Mo, as you can see</p> <p>24 here, this is a screenshot of a YouTube app. And</p> <p>25 there is a current cast session that says, "Playing 1:29PM</p> <p style="text-align: right;">Page 122</p>	<p>1 BY MR. BOYEA: 1:31PM</p> <p>2 Q What information would you need to know?</p> <p>3 A Just where it's getting the data from for</p> <p>4 populating this TV queue section.</p> <p>5 Q Yes, those are the questions I'm asking 1:32PM</p> <p>6 you, right?</p> <p>7 You are Google's 30(b)(1) witness on the</p> <p>8 accused autoplay functionality for the YouTube apps.</p> <p>9 So what I'm asking you is: As Google's</p> <p>10 representative, how is the TV queue represented here 1:32PM</p> <p>11 on the screen, how is that presented in the MDx</p> <p>12 session server, if at all?</p> <p>13 MR. KAPLAN: Object to form and</p> <p>14 authenticity.</p> <p>15 THE WITNESS: Again, not knowing exactly 1:32PM</p> <p>16 where -- what this is tied to, which client, which</p> <p>17 date, I can't say for certain.</p> <p>18 BY MR. BOYEA:</p> <p>19 Q All right. The date this was taken was</p> <p>20 this weekend using a current YouTube app running on 1:33PM</p> <p>21 a pixel device -- or excuse me, on an iPhone and --</p> <p>22 yeah, it was running on an iPhone.</p> <p>23 So what other information do you need from</p> <p>24 me?</p> <p>25 A There's also a lot of things that I alluded 1:33PM</p> <p style="text-align: right;">Page 124</p>
<p>1 on Speaker A." 1:30PM</p> <p>2 Do you see that?</p> <p>3 MR. KAPLAN: Object to authenticity. Go</p> <p>4 ahead.</p> <p>5 THE WITNESS: I do see this picture that's 1:30PM</p> <p>6 in this document.</p> <p>7 BY MR. BOYEA:</p> <p>8 Q Are you familiar with the panel that is</p> <p>9 shown where it says, "TV queue 2/2" and then below</p> <p>10 that, "Autoplay is on"? 1:30PM</p> <p>11 Have you seen that before?</p> <p>12 A I can't say for certain. The UI is -- maybe</p> <p>13 I'm more familiar with another UI.</p> <p>14 Q But are you familiar with this type of UI</p> <p>15 where there are TV queue items followed by an 1:30PM</p> <p>16 autoplay section?</p> <p>17 A Yes, I have seen UIs with similar layouts.</p> <p>18 Q All right. So what I want to find out is:</p> <p>19 In this example that we have up on the screen here,</p> <p>20 would the shared queue in the MDx service, would 1:31PM</p> <p>21 that contain the TV queue items? Let's start there.</p> <p>22 MR. KAPLAN: Object to form.</p> <p>23 THE WITNESS: It's hard to say without</p> <p>24 knowing exactly what is actually happening behind</p> <p>25 the scenes with this UI. 1:31PM</p> <p style="text-align: right;">Page 123</p>	<p>1 to before YouTube runs experiments, which means that 1:33PM</p> <p>2 not all the users are guaranteed to get the same</p> <p>3 experience.</p> <p>4 Q How does that change your answer?</p> <p>5 A I can't say anything with particularity. 1:33PM</p> <p>6 Q You're Google's 30(b) -- yeah, go ahead.</p> <p>7 A I just wouldn't be able to say for certain</p> <p>8 for this specific case.</p> <p>9 Q Let's take it away from this specific</p> <p>10 case. 1:34PM</p> <p>11 You understand that YouTube, you can cast</p> <p>12 a user-selected item; correct, a user-selected</p> <p>13 video; right?</p> <p>14 A Yes.</p> <p>15 Q And in the casting context, YouTube will 1:34PM</p> <p>16 provide an autoplay recommendation; correct?</p> <p>17 A It provides the capability for which the</p> <p>18 user can enable.</p> <p>19 Q And in fact, YouTube has autoplay enabled</p> <p>20 by default; right? 1:34PM</p> <p>21 MR. KAPLAN: Object to form and scope.</p> <p>22 THE WITNESS: I don't know.</p> <p>23 BY MR. BOYEA:</p> <p>24 Q You don't know one way or the other;</p> <p>25 right? 1:34PM</p> <p style="text-align: right;">Page 125</p>

<p>1 A I don't think there's any definitive answer 1:34PM 2 that can be just answered for all contexts. 3 Q Let's assume autoplay is enabled. When a 4 user casts a single selected video, there will be an 5 autoplay recommended video after that; correct? 1:35PM 6 A Sorry, after what? 7 Q The autoplay recommended video would be 8 the video that would be playing next after the 9 user-selected video; correct? 10 A Yes, for the context where a single video is 1:35PM 11 selected. 12 Q Correct. So what I'm wondering is where 13 is this information stored in the cloud, for 14 instance? This current video and the autoplay 15 video, where does that information come from? 1:35PM 16 A Again, I can't speak for this specific 17 screenshot, but for the other UI components that I am 18 aware of, that shows the remote queue in autoplay. 19 The remote queue -- the remote queue I believe on the 20 sender side -- I'm actually not 100 percent sure. 1:36PM 21 For the autoplay, that comes from the 22 receiver. 23 Q And what do you mean by it "comes from the 24 receiver"? 25 A The receiver gets the autoplay -- again, 1:36PM Page 126</p>	<p>1 watch next service. 1:38PM 2 Q I think we'll circle back to asking some 3 specific questions about the watch next service. 4 But returning to Exhibit 7, I just want to 5 make sure I understand. 1:39PM 6 So as Google's 30(b)(6) -- as Google's 7 30(b)(6) designee, are you testifying here today 8 that you're unfamiliar with the user interface 9 that's shown in Exhibit 7? 10 MR. KAPLAN: Object to form, scope. 1:39PM 11 THE WITNESS: I'm saying that I can't say 12 definitively what the data source is for what is 13 shown here. 14 BY MR. BOYEA: 15 Q Could you make an educated guess as to the 1:39PM 16 data source of what is shown as Google's 30(b)(6) 17 designee? 18 MR. KAPLAN: Object to form. You can 19 answer. 20 THE WITNESS: Yes. Same to what I 1:40PM 21 mentioned earlier, the autoplay for the cast use 22 case would be coming from the receiver, which it 23 gets from the watch next response, and the queue 24 would be from either playlist service -- actually 25 likely would be from playlist service. 1:40PM Page 128</p>
<p>1 there's various -- I'm talking about if there is a 1:36PM 2 specific autoplay field in the MDx autoplay and the 3 watch next response that only the receiver gets. 4 When the receiver knows that the autoplay 5 setting is enabled by the user, by the sender, it 1:37PM 6 will send that information back to the session 7 server and then to the sender. 8 Q I want to take a step back because I think 9 my question was probably confusing in the beginning. 10 In the MDx cloud portion of the system, 1:37PM 11 does the MDx cloud keep track of the current video 12 that's playing on the cast receiver and keep track 13 of the next video that would be playing at the cast 14 receiver with this autoplay feature enabled? 15 A I wouldn't necessarily say that it keeps 1:38PM 16 track of. It does get playback state, with "it" being 17 the session server gets playback state from the 18 receiver client. 19 And the receiver, again, sends messages to 20 the session server when it has information about the 1:38PM 21 autoplay recommendation. 22 Q Where does the cast receiver receive the 23 autoplay recommendation from? 24 A For the specific case that I am thinking of, 25 MDx autoplay comes from the watch next response or the 1:38PM Page 127</p>	<p>1 BY MR. BOYEA: 1:40PM 2 Q What does the phrase "TV queue" mean in 3 the context of YouTube? 4 MR. KAPLAN: Object to form. 5 THE WITNESS: It's really ambiguous to me. 1:40PM 6 I would say it depends on what we're talking to 7 specifically. I know it mentions TV queue in this 8 screenshot. 9 BY MR. BOYEA: 10 Q It says it in the screenshot and I'm 1:41PM 11 asking you: In the context of the YouTube app as 12 shown on Exhibit 7, what does "TV queue" mean? 13 MR. KAPLAN: Same objection. 14 THE WITNESS: My educated guess is that 15 it's the shared queue. 1:41PM 16 BY MR. BOYEA: 17 Q So we talked about the MDx session server 18 sending a set play message to a cast receiver; 19 right? 20 A Sorry, can you repeat that? 1:42PM 21 Q Do you remember talking about the MDx 22 session server sending a set playlist message to the 23 cast receiver? 24 A Yes. 25 Q So the message flow of the set playlist 1:42PM Page 129</p>

<p>1 A I can't speak to the specifics of what is 2:14PM 2 returned in that response and what are the specific 3 pieces of information that a player -- a player needs. 4 Q Well, I guess let's take a step back from 5 the response. 2:14PM 6 So the cast receiver receives the set 7 playlist message from the MDx server with a video 8 ID; right? That video ID corresponds to media that 9 the cast receiver is supposed to play back; right? 10 A Yeah, the video ID is of the video or song 2:15PM 11 that the user wants to play. 12 Q Presumably the cast receiver then gets the 13 video or song for actual playback; right? 14 A Yes, playback happens again with the video 15 ID or playlist ID, the video ID past to get player 2:15PM 16 which is, again, handled by the player -- player 17 module. 18 Q Whatever module it's handled by, that's 19 not my question. I'm asking: The cast receiver 20 will ultimately retrieve the song or video and play 2:16PM 21 it back; correct? 22 A Yes, in some form playback happens. 23 Q How does that happen -- 24 MR. KAPLAN: Objection. 25</p> <p style="text-align: right;">Page 142</p>	<p>1 specificity other than "the information that it 2:18PM 2 needs"? 3 A No, other than there's just high levels of 4 understanding that I may have versus someone who 5 actually knows a lot more about the playback. 2:18PM 6 Q As Google's 30(b)(6) designee, I would 7 like your high level understanding of the steps. 8 A Sure. At a high level, YouTube playback 9 relies on what we call band-aid servers. They are -- 10 they essentially will -- they are kind of like a cache 2:19PM 11 system for storing video -- video bits for playback. 12 As far as I understand, player responds 13 and obtains information that the player needs to 14 know, you know, where these servers or caches are to 15 load from. 2:19PM 16 Beyond that, the player has additional 17 logic for it, for adapting to the environment and so 18 forth during playback. 19 Q Now, is the band-aid server that you're 20 referring to, is that something different than the 2:19PM 21 MDx server never that we were talking about before? 22 A Yes, it is. 23 Q Is the band-aid service something 24 different than the player service we were referring 25 to before? 2:20PM</p> <p style="text-align: right;">Page 144</p>
<p>1 BY MR. BOYEA: 2:16PM 2 Q -- when receiving the video ID to actually 3 playing back the song or video? Fill in that gap, 4 please. 5 MR. KAPLAN: Object to form. Go ahead. 2:16PM 6 THE WITNESS: From my perspective, it 7 gets -- I guess the receiver or client gets a video 8 ID and what happens underneath is -- what happens 9 after that is a get player request is made and then 10 the response contains -- it may contain, you know, 2:17PM 11 URLs related to where the content may be. There is 12 a lot of intricacies to how that's done. 13 BY MR. BOYEA: 14 Q That doesn't answer the whole question 15 because I asked: How does it actually play back the 2:17PM 16 video or song? 17 And so what are the next steps that would 18 facilitate that process? 19 MR. KAPLAN: Object to form. 20 THE WITNESS: Again, the player gets the 2:17PM 21 information that it needs to get the data that it 22 needs to play the video -- to play the video. 23 BY MR. BOYEA: 24 Q You're saying the player gets the 25 information that it needs. Can you give me any more 2:18PM Page 143</p>	<p>1 A Yes. 2:20PM 2 Q Is it different than wherever the watch 3 next service is provided by -- let me strike that. 4 Is the band-aid server a different server 5 than whatever is providing the watch next service? 2:20PM 6 A Yes. 7 Q Do all of the YouTube apps ultimately 8 utilize a band-aid server in the casting context? 9 A I don't know if I can -- I would not be able 10 to definitely say all for all cases. 2:21PM 11 Q Let's take them one by one then, I guess. 12 For the YouTube main example, when casting 13 YouTube main, is the content for YouTube obtained 14 from a band-aid server? 15 A Again, my information is that at a high 2:21PM 16 level -- I don't know if there's any other cases that 17 I am unaware of where that might not be the case. But 18 my understanding is that it will try to retrieve from 19 band-aid or edge server. 20 Q And I'm not curious for the edge cases 2:21PM 21 here. 22 In the other YouTube app context, will a 23 band-aid server typically be used to obtain the 24 underlying content? 25 A My understanding is yes. 2:22PM</p> <p style="text-align: right;">Page 145</p>



<p>1 that the cast receiver processes? 3:02PM</p> <p>2 A Yes, again, there could be cases where the</p> <p>3 watch next response may contain, you know, multiple</p> <p>4 fields that contain video ID.</p> <p>5 Q And will the cast receiver store in its 3:02PM</p> <p>6 memory an indication of two different video IDs?</p> <p>7 A The source code could have multiple copies</p> <p>8 of various variables at any time. So it's possible</p> <p>9 that it's storing multiples of anything.</p> <p>10 Q Yes, that was not my question. 3:03PM</p> <p>11 So my question is: It seems like there</p> <p>12 are circumstances where a watch next response could</p> <p>13 contain two different video IDs; is that correct?</p> <p>14 A There could be cases where there could be</p> <p>15 multiple fields of video ID fields in them. 3:03PM</p> <p>16 Q That's not the question I'm asking you,</p> <p>17 Mr. Mo. So please answer the question that I'm</p> <p>18 asking.</p> <p>19 Can a watch next response contain two</p> <p>20 different video IDs, not a duplicate of the same 3:03PM</p> <p>21 video ID?</p> <p>22 A Yes, it can.</p> <p>23 Q What are the circumstances where that</p> <p>24 might happen?</p> <p>25 A One would be if, for example, in autoplay 3:04PM</p> <p style="text-align: right;">Page 166</p>	<p>1 singleton stored in -- stored in memory with the 3:06PM</p> <p>2 application.</p> <p>3 Q Let's use that broader understanding of</p> <p>4 "store in memory," whether it's transitory or</p> <p>5 constant, and let's use that understanding of 3:06PM</p> <p>6 storing in memory; okay?</p> <p>7 A Okay.</p> <p>8 Q In the example that we're referring to,</p> <p>9 does the cast receiver store in memory the video ID</p> <p>10 of the current video that it receives in the watch 3:06PM</p> <p>11 next response?</p> <p>12 A Yes, I'm sure there is some variable</p> <p>13 somewhere that it represents the watch next response.</p> <p>14 Q Will the cast receiver store in memory the</p> <p>15 video ID of the autoplay video in its memory? 3:07PM</p> <p>16 MR. KAPLAN: Object to form.</p> <p>17 THE WITNESS: Again, without just -- I</p> <p>18 can't -- it's difficult for me to answer off the top</p> <p>19 of my head. I would imagine that there is a</p> <p>20 variable somewhere that stores the autoplay 3:07PM</p> <p>21 information.</p> <p>22 BY MR. BOYEY: A</p> <p>23 Q And what would the autoplay information be</p> <p>24 used for?</p> <p>25 A One scenario is for it to send a message to 3:07PM</p> <p style="text-align: right;">Page 168</p>
<p>1 there is like a field in watch next response that 3:04PM</p> <p>2 contains the autoplay, which we referred to earlier,</p> <p>3 that will likely have the video ID of the autoplay</p> <p>4 video in addition to the current video, the video ID</p> <p>5 of the current video. 3:04PM</p> <p>6 Q And would the cast receiver store in its</p> <p>7 memory the video ID of the current video?</p> <p>8 A Yes, it's possible that there are variables</p> <p>9 stored in memory.</p> <p>10 Q I don't know that you answered my exact 3:05PM</p> <p>11 question, so I'll repeat it again.</p> <p>12 In this scenario, would the cast receiver</p> <p>13 store in its memory the video ID of the current</p> <p>14 video?</p> <p>15 A Can you clarify like, again, the storing in 3:05PM</p> <p>16 memory?</p> <p>17 Q Do you have an understanding of what it</p> <p>18 means to store something in memory, Mr. Mo?</p> <p>19 A I understand there's different -- there</p> <p>20 could be different meanings. I just wanted to make 3:05PM</p> <p>21 sure if there was a specific one in mind.</p> <p>22 Q What is your understanding of the phrase</p> <p>23 "storing in memory"?</p> <p>24 A Again, it could mean -- there could be a</p> <p>25 local variable in the function, there could be 3:06PM</p> <p style="text-align: right;">Page 167</p>	<p>1 the session server and then that gets sent back to the 3:08PM</p> <p>2 sender so that it can render, like, this is what the</p> <p>3 video the autoplay video would be or is so that it can</p> <p>4 get rendered.</p> <p>5 And then that's one of the scenarios. 3:08PM</p> <p>6 Q Will the cast receiver ultimately playback</p> <p>7 the autoplay video?</p> <p>8 A Yes, it can under certain -- yes, under</p> <p>9 certain situations where autoplay is triggered.</p> <p>10 Q In the instance where it does actually 3:08PM</p> <p>11 play the autoplay video, will the cast receiver do</p> <p>12 another get player request like the one we were</p> <p>13 talking about before?</p> <p>14 MR. KAPLAN: Objection.</p> <p>15 THE WITNESS: Yes, it will. 3:09PM</p> <p>16 BY MR. BOYEY: A</p> <p>17 Q That get player request, will that include</p> <p>18 the video ID of the autoplay video?</p> <p>19 A Yes, I would assume it would.</p> <p>20 Q So we were talking about the playlist ID 3:09PM</p> <p>21 example. In a circumstance where the set playlist</p> <p>22 message that the receiver -- cast receiver receives,</p> <p>23 when that has a video ID in it, what is the order of</p> <p>24 steps of when to watch next request happens?</p> <p>25 A So I know in one scenario where get 3:09PM</p> <p style="text-align: right;">Page 169</p>



<p>1 player -- again, get player is made and then as a form 3:10PM</p> <p>2 of optimization, the client will defer making the</p> <p>3 watch next until it's been notified that playback has</p> <p>4 actually started.</p> <p>5 Q And will that notification be some sort of 3:10PM</p> <p>6 internal notification at the cast receiver?</p> <p>7 MR. KAPLAN: Object to form.</p> <p>8 THE WITNESS: There's code within the</p> <p>9 receiver, the YouTube receiver app where, you know,</p> <p>10 it can get that information from an API. 3:10PM</p> <p>11 BY MR. BOYEA:</p> <p>12 Q Okay. And then so the cast receiver will</p> <p>13 ultimately make a watch next request and in this</p> <p>14 example, what would be in the watch next request?</p> <p>15 A The playlist ID would be one, the video ID 3:11PM</p> <p>16 would be another and then there would be other ones.</p> <p>17 I can't list off of my head.</p> <p>18 Q So in this circumstance there would be</p> <p>19 both a playlist ID and a video ID and the video ID</p> <p>20 corresponds to the video that the cast receiver is 3:11PM</p> <p>21 currently playing; correct?</p> <p>22 A Yes.</p> <p>23 Q Okay. What would be the contents of the</p> <p>24 watch next response that the cast receiver receives?</p> <p>25 A It may contain the current watch video 3:11PM</p> <p style="text-align: right;">Page 170</p>	<p>1 to the specific watch next response fields. It 3:14PM</p> <p>2 doesn't necessarily have -- my interpretation is it</p> <p>3 doesn't necessarily have to be related to autoplay.</p> <p>4 But it just contains information where</p> <p>5 essentially the server kind of contains a fill of 3:14PM</p> <p>6 information for the client to handle different</p> <p>7 playback scenarios to kind of keep -- to make the</p> <p>8 client have to rely less on client side logic.</p> <p>9 Q Within that autoplay set renderer, there</p> <p>10 could be multiple endpoints; correct? 3:15PM</p> <p>11 A Again, I don't remember exactly the name,</p> <p>12 but I think they have endpoint in those names.</p> <p>13 Q Each endpoint corresponds to a different</p> <p>14 video ID; correct?</p> <p>15 MR. KAPLAN: Form. 3:15PM</p> <p>16 THE WITNESS: Yeah, not necessarily.</p> <p>17 BY MR. BOYEA:</p> <p>18 Q I'll strike and ask you a different</p> <p>19 question.</p> <p>20 The different endpoints that are contained 3:15PM</p> <p>21 within the autoplay set could correspond to</p> <p>22 different video IDs; correct?</p> <p>23 A Yes, the endpoints in the autoplay set</p> <p>24 renderers could contain different video ID values.</p> <p>25 Q So as one example, if the sender was 3:16PM</p> <p style="text-align: right;">Page 172</p>
<p>1 endpoint, similar to the other case. It may 3:12PM</p> <p>2 contain -- again, the specifics will kind of depend on</p> <p>3 are certain autoplay settings enabled or not, which</p> <p>4 client are we talking with again.</p> <p>5 But this is kind of just being -- without 3:12PM</p> <p>6 being too narrow and -- I'll give you an example.</p> <p>7 Metadata about the current video title, subtitle,</p> <p>8 artist, so forth. If it's a playlist, it may</p> <p>9 contain metadata information about that as well.</p> <p>10 Again, depending on the actual client, 3:12PM</p> <p>11 there could be other UI-related data that the client</p> <p>12 may use.</p> <p>13 Q What about in terms of video IDs? In this</p> <p>14 particular example, will there be a single or</p> <p>15 multiple video IDs that get returned? 3:13PM</p> <p>16 A The watch next response could contain deals</p> <p>17 with video IDs that may differ. Again, the autoplay</p> <p>18 is one that could differ from the current.</p> <p>19 There could be -- there is a notion of --</p> <p>20 there's autoplay set renderer where it will contain 3:13PM</p> <p>21 like next, previous, so forth, depending on the</p> <p>22 playback.</p> <p>23 Q What is in the autoplay set renderer? Can</p> <p>24 you explain to me exactly what that is?</p> <p>25 A Yes, that's just the naming that was given 3:14PM</p> <p style="text-align: right;">Page 171</p>	<p>1 casting a playlist and the cast receiver was playing 3:16PM</p> <p>2 the first item within the playlist, would the</p> <p>3 autoplay -- or would the watch next response include</p> <p>4 a next video ID that is separate and apart from any</p> <p>5 autoplay video ID? 3:16PM</p> <p>6 A Can you rephrase that?</p> <p>7 Q Yes. Let me unpack it because it's a</p> <p>8 specific use.</p> <p>9 So let's say we're playing a playlist in a</p> <p>10 cast session. Okay? And you understand a 3:17PM</p> <p>11 playlist --</p> <p>12 MR. BOYEA: Sorry, did somebody --</p> <p>13 THE WITNESS: Sorry, I was asking on the</p> <p>14 sender side; right?</p> <p>15 BY MR. BOYEA: 3:17PM</p> <p>16 Q Yes. So the sender has initiated a cast</p> <p>17 session with a playlist that's going to be played</p> <p>18 back.</p> <p>19 The cast receiver is playing within that</p> <p>20 playlist, so say the playlist is ten songs long, 3:17PM</p> <p>21 it's somewhere within the playlist.</p> <p>22 When the cast receiver makes a watch next</p> <p>23 request, say it's playing currently song 5, when it</p> <p>24 makes the watch next request, will the watch next</p> <p>25 response include the next video ID for song 3:17PM</p> <p style="text-align: right;">Page 173</p>

<p>1 number 6? 3:18PM</p> <p>2 A I believe the -- again, for clients that</p> <p>3 have the -- sorry, the watch next response is</p> <p>4 dependent on kind of capabilities defined by the</p> <p>5 client. 3:18PM</p> <p>6 So certain fields will only get filled if</p> <p>7 it's actually defined.</p> <p>8 So what specific next endpoint are you</p> <p>9 referring to again?</p> <p>10 Q Yes. So that's what I'm trying to get to 3:18PM</p> <p>11 is the next endpoint is not necessarily going to be</p> <p>12 an autoplay video; right?</p> <p>13 A Correct, and in fact, the autoplay may not</p> <p>14 even be -- it's -- it may not even be the next -- it</p> <p>15 may not be labeled as the next video, they may just be 3:19PM</p> <p>16 also named like MDx autoplay.</p> <p>17 Q Right, and that's what I'm trying to get</p> <p>18 at.</p> <p>19 So there are circumstances where the cast</p> <p>20 receiver will receive in the watch next response a 3:19PM</p> <p>21 video ID of a next video, but that doesn't have to</p> <p>22 be the autoplay video; correct?</p> <p>23 A Yeah, there are cases where the next one</p> <p>24 doesn't have to be associated with the autoplay.</p> <p>25 Q Let's continue with that example. 3:20PM</p> <p>Page 174</p>	<p>1 playing the current song or video? 3:22PM</p> <p>2 A As far as I know, it makes the call when it</p> <p>3 finishes the current playback.</p> <p>4 THE REPORTER: Is this a good time for a</p> <p>5 break? 3:22PM</p> <p>6 MR. KAPLAN: Before we take a break, could</p> <p>7 we mark the transcript as highly confidential source</p> <p>8 code, please?</p> <p>9 THE REPORTER: Sure.</p> <p>10 MR. BOYEA: Let's go ahead and go off the 3:23PM</p> <p>11 record.</p> <p>12 THE VIDEOGRAPHER: Off the record at</p> <p>13 3:23 p.m.</p> <p>14 (Recess taken.)</p> <p>15 VIDEOGRAPHER: We're back on the record. 3:34PM</p> <p>16 The time is 3:34 p.m. Pacific time.</p> <p>17 MR. BOYEA: We're going to introduce</p> <p>18 another exhibit here. This is some additional</p> <p>19 screenshots, Mr. Mo, that I want you to take a look</p> <p>20 at. 3:34PM</p> <p>21 And I'm going to just walk through them</p> <p>22 with you and see if you can explain some things to</p> <p>23 me. This is going to be marked as Mo Exhibit 8.</p> <p>24 (Exhibit 8 was marked for identification.)</p> <p>25 MR. BOYEA: It should be coming through</p> <p>Page 176</p>
<p>1 Will the cast receiver store the video ID 3:20PM</p> <p>2 of the next video somewhere in memory?</p> <p>3 A In the case where the watch next response</p> <p>4 contains that, yes, because I would imagine the watch</p> <p>5 next response is -- the model is stored in memory. 3:20PM</p> <p>6 Q After the receiver finishes playing the</p> <p>7 current video, will the receiver then use that next</p> <p>8 video that's stored in memory to make the get player</p> <p>9 request?</p> <p>10 A In the case where the watch next response 3:20PM</p> <p>11 contains let's say an autoplay set renderer for the</p> <p>12 next -- something called next -- I forget the exact</p> <p>13 name, next video or something rather, it will -- when</p> <p>14 the current song ends, it will look up that data model</p> <p>15 and then it will extract the appropriate endpoint for 3:21PM</p> <p>16 the next video to play.</p> <p>17 Q Will that involve a get player request to</p> <p>18 the player service that we were talking about</p> <p>19 before?</p> <p>20 A Yeah, once it obtains a video ID from that 3:21PM</p> <p>21 model, it will generally go through the same flow for</p> <p>22 playback, which is making the get player request and</p> <p>23 then possibly the -- likely another get watch next.</p> <p>24 Q Will the cast receiver make the get player</p> <p>25 request before or after the cast receiver finishes 3:22PM</p> <p>Page 175</p>	<p>1 now. 3:35PM</p> <p>2 THE WITNESS: I have it loaded.</p> <p>3 BY MR. BOYEA:</p> <p>4 Q Okay. All right. Mr. Mo, these are some</p> <p>5 screenshots that I took this past weekend and this 3:35PM</p> <p>6 was done on an iPhone and there is a cast session</p> <p>7 that's established.</p> <p>8 In Screenshot 1 we see that there is a</p> <p>9 first video being played with the title that has</p> <p>10 "Max Homa," H-O-M-A in it. 3:35PM</p> <p>11 Do you see that?</p> <p>12 A Yes, I do.</p> <p>13 Q In this circumstance, the speaker -- the</p> <p>14 receiver named Speaker A is currently playing the</p> <p>15 Max Homa video. 3:35PM</p> <p>16 And so would it be the case that the cast</p> <p>17 receiver would have a video ID stored corresponding</p> <p>18 to that video that's being played?</p> <p>19 MR. KAPLAN: Objection, authenticity.</p> <p>20 THE WITNESS: Sorry, can you walk me 3:36PM</p> <p>21 through like the scenario of which you've got here?</p> <p>22 BY MR. BOYEA:</p> <p>23 Q Yes. So Screenshot Number 1, it was local</p> <p>24 playback on the iPhone and then it was a cast</p> <p>25 directed to a Hub display. So the Hub display is 3:36PM</p> <p>Page 177</p>

<p>1 what's named Speaker A. 3:36PM</p> <p>2 And so my first question is: Would the</p> <p>3 Hub display have a video ID corresponding to the Max</p> <p>4 Homa video that's being played?</p> <p>5 MR. KAPLAN: Object to form. 3:37PM</p> <p>6 THE WITNESS: It's hard for me to answer</p> <p>7 or say based off of a screenshot.</p> <p>8 BY MR. BOYEA:</p> <p>9 Q Again, I'm trying to use these screenshots</p> <p>10 to direct what is going on because you can't really 3:37PM</p> <p>11 take a picture of what a -- what speakers are doing</p> <p>12 when they are playing video and the like.</p> <p>13 So I don't want you to get so worried</p> <p>14 about what is being displayed on the screen, but the</p> <p>15 general functionality is really what I'm interested 3:37PM</p> <p>16 in.</p> <p>17 So in an example like this where a Hub</p> <p>18 device is playing a song from YouTube and it's in a</p> <p>19 cast session, it would have a video ID retained</p> <p>20 locally corresponding to the video that it's 3:38PM</p> <p>21 playing; right?</p> <p>22 MR. KAPLAN: Object to form.</p> <p>23 THE WITNESS: Yes, the receiver would have</p> <p>24 a video ID for the actual video that is playing on</p> <p>25 the device, on the receiver device. 3:38PM</p> <p style="text-align: right;">Page 178</p>	<p>1 when that setting changes, which then will get a new 3:40PM</p> <p>2 response that I don't think will contain the</p> <p>3 autoplay endpoint.</p> <p>4 BY MR. BOYEA:</p> <p>5 Q And so if the autoplay toggle was turned 3:40PM</p> <p>6 back on, though, would there be an additional watch</p> <p>7 next request and watch next response where the cast</p> <p>8 receiver can receive a new video ID for a new</p> <p>9 autoplay video?</p> <p>10 And that's what's being show here, that's 3:40PM</p> <p>11 what I'm trying to use with these examples, you can</p> <p>12 see Screenplay 1, autoplay is on, there's a first</p> <p>13 video underneath called "Playing Sheep Ranch" is the</p> <p>14 beginning of the title.</p> <p>15 Screen 2, autoplay is off. And then 3:41PM</p> <p>16 Screen 3, autoplay is back on and the autoplay video</p> <p>17 is "2001 Masters Tournament."</p> <p>18 Do you see that? So that's what I'm</p> <p>19 really trying to ask you about here.</p> <p>20 So let me reframe the question. 3:41PM</p> <p>21 So if autoplay is turned on from a state</p> <p>22 when it was turned off, will the cast receiver make</p> <p>23 a new watch next request?</p> <p>24 MR. KAPLAN: Object to form.</p> <p>25 THE WITNESS: From memory, I'm not certain 3:41PM</p> <p style="text-align: right;">Page 180</p>
<p>1 BY MR. BOYEA: 3:38PM</p> <p>2 Q And assuming autoplay is on, like in this</p> <p>3 example shown in Screenshot 1, the cast receiver</p> <p>4 would also have a video ID retained locally that</p> <p>5 corresponds to the autoplay video; correct? 3:38PM</p> <p>6 A I'm assuming that this refers to -- this</p> <p>7 toggle refers to the MDx autoplay. Again, if that's</p> <p>8 enabled, the receiver will have a watch next -- could</p> <p>9 have a watch next response containing the autoplay</p> <p>10 endpoint. 3:39PM</p> <p>11 Q Okay. And so if the autoplay toggle is</p> <p>12 turned off while the receiver is playing the current</p> <p>13 video, will that autoplay response that it had</p> <p>14 retained locally, will that be like deleted, erased?</p> <p>15 Do you know what I'm saying? 3:39PM</p> <p>16 MR. KAPLAN: Object to form.</p> <p>17 THE WITNESS: I don't know if I'm -- from</p> <p>18 memory whether that gets deleted or not or if it</p> <p>19 makes another watch next --</p> <p>20 THE REPORTER: I'm sorry, I didn't 3:40PM</p> <p>21 understand that.</p> <p>22 THE WITNESS: I don't know from memory</p> <p>23 whether the client deletes -- or does anything with</p> <p>24 the current -- the current copy of the watch next</p> <p>25 response or if it makes another watch next request 3:40PM</p> <p style="text-align: right;">Page 179</p>	<p>1 what actually happens on the receiver side. 3:41PM</p> <p>2 BY MR. BOYEA:</p> <p>3 Q If the queue is presented in a screen</p> <p>4 showing a different video like we see in</p> <p>5 Screenshot 3, would it be reasonable that the cast 3:42PM</p> <p>6 receiver would have to receive a new watch next</p> <p>7 response?</p> <p>8 MR. KAPLAN: Objection, calls for</p> <p>9 speculation.</p> <p>10 THE WITNESS: Can you repeat that? 3:42PM</p> <p>11 BY MR. BOYEA:</p> <p>12 Q Yes. So, I mean, looking at the screen --</p> <p>13 as Google's 30(b)(6) witness on autoplay, which is</p> <p>14 subtopic -- what do we have here? This is</p> <p>15 subtopic 7 of Topic 1, I'm trying to get an 3:42PM</p> <p>16 understanding of what happens in this particular use</p> <p>17 case that we have displayed here in Exhibit 8.</p> <p>18 And so from Screenshot 2 to Screenshot 3,</p> <p>19 we see that autoplay goes from being off to on and</p> <p>20 for Google, I want to know what happens in this 3:42PM</p> <p>21 particular situation, and especially with respect to</p> <p>22 any watch next request and response.</p> <p>23 MR. KAPLAN: Object to form.</p> <p>24 THE WITNESS: In the case where YouTube</p> <p>25 may not -- I think what I'm aware of supports that 3:43PM</p> <p style="text-align: right;">Page 181</p>

<p>1 this tog -- has an MDx auto playing toggle, again, 3:43PM</p> <p>2 assuming that's what that is in the screenshot, I</p> <p>3 don't know for sure. Assuming that's the case, that</p> <p>4 toggle -- essentially that setting results in a</p> <p>5 message sent from sender to session server, which 3:43PM</p> <p>6 then gets forwarded to the cast receiver. And then</p> <p>7 the cast receiver is made aware of the autoplay</p> <p>8 setting made by the sender/user.</p> <p>9 What I don't know from memory is whether</p> <p>10 that triggers another watch next request or whether 3:43PM</p> <p>11 it results in discarding the autoplay response that</p> <p>12 may have already been returned.</p> <p>13 BY MR. BOYEA:</p> <p>14 Q You would agree with me in this scenario</p> <p>15 that we're depicting here, that after the cast 3:44PM</p> <p>16 receiver finishes playing that first Max Homa video,</p> <p>17 it would then play the new autoplay video "2001</p> <p>18 Masters Tournament" as opposed to the "Playing Sheep</p> <p>19 Ranch" video; right?</p> <p>20 A I'm sorry, at the end of which video would 3:44PM</p> <p>21 it play the -- can you repeat that?</p> <p>22 Q So the cast receiver is currently playing</p> <p>23 Max Homa; right, the video with the title Max Homa?</p> <p>24 A Okay.</p> <p>25 Q After the cast receiver finishes playing 3:45PM</p> <p style="text-align: right;">Page 182</p>	<p>1 for is subpart 3 of Topic 1, which is the design and 3:46PM</p> <p>2 operation of the aforementioned stream transfer</p> <p>3 accused functionality relating to the YouTube apps.</p> <p>4 And when I asked you earlier, you had</p> <p>5 noted that you don't have knowledge of the stream 3:47PM</p> <p>6 transfer function. Is that accurate? Did I get</p> <p>7 that right in your testimony earlier?</p> <p>8 MR. KAPLAN: Object to form.</p> <p>9 THE WITNESS: Sorry, I don't remember the</p> <p>10 entire context of that question. 3:47PM</p> <p>11 BY MR. BOYEA:</p> <p>12 Q All right. So maybe why don't I start</p> <p>13 over for us then.</p> <p>14 So are you familiar with the feature</p> <p>15 called "stream transfer" in the context of any of 3:47PM</p> <p>16 the YouTube apps?</p> <p>17 A Yes, I've heard of stream transfer feature.</p> <p>18 Q Are you knowledgeable regarding the</p> <p>19 implementation details of that feature?</p> <p>20 A I have some knowledge as it pertains to 3:48PM</p> <p>21 YouTube.</p> <p>22 MR. BOYEA: Okay. So why don't we go</p> <p>23 ahead and introduce a new document here. And Jae is</p> <p>24 going to pull that up for us. That's going to be</p> <p>25 identified as Mo Exhibit 9 for identification 3:48PM</p> <p style="text-align: right;">Page 184</p>
<p>1 that video, you agree that the "2001 Masters 3:45PM</p> <p>2 Tournament" video would be played instead of the</p> <p>3 "Playing Sheep Ranch" video; right?</p> <p>4 MR. KAPLAN: Object to form.</p> <p>5 THE WITNESS: If I'm just looking at 3:45PM</p> <p>6 Screenshot Number 3, that's what it shows as the</p> <p>7 autoplay video. So I don't see "Sheep Ranch" in</p> <p>8 Screenshot 3.</p> <p>9 BY MR. BOYEA:</p> <p>10 Q Right. And so that's what I'm trying to 3:45PM</p> <p>11 get at.</p> <p>12 So it would seem reasonable, right, that</p> <p>13 the cast receiver would have to obtain that</p> <p>14 information somehow that has to play the "2001</p> <p>15 Masters Tournament" video instead of the "Playing 3:46PM</p> <p>16 Sheep Ranch" video that was in Screenshot 1; right?</p> <p>17 A Yes, that's possible.</p> <p>18 Q It's not only possible, but is there any</p> <p>19 other way for that to happen in this situation?</p> <p>20 MR. KAPLAN: Object to form. 3:46PM</p> <p>21 THE WITNESS: Again, within the context of</p> <p>22 MDx autoplay, I'm only aware of it being made</p> <p>23 available via watch next response.</p> <p>24 BY MR. BOYEA:</p> <p>25 Q One of the topics that you're designated 3:46PM</p> <p style="text-align: right;">Page 183</p>	<p>1 purposes. 3:48PM</p> <p>2 (Exhibit 9 was marked for identification.)</p> <p>3 BY MR. BOYEA:</p> <p>4 Q Mr. Mo, you should see that now and go</p> <p>5 ahead and read that when you get the chance. 3:49PM</p> <p>6 MR. BOYEA: For the record, this is a</p> <p>7 document entitled "Cast Stream Transfer and YouTube"</p> <p>8 and the first Bates-labeled page shows</p> <p>9 GOOG-SONOSWDTX-00041934.</p> <p>10 Q Mr. Mo, let me know when you have that 3:49PM</p> <p>11 open.</p> <p>12 A I have that open.</p> <p>13 Q You're familiar with this document;</p> <p>14 correct?</p> <p>15 A I see my name at the top. Let me review 3:49PM</p> <p>16 this.</p> <p>17 I skimmed through it.</p> <p>18 Q Your name is next to owner; correct?</p> <p>19 A Yes, I see that.</p> <p>20 Q What does that mean that you're the owner 3:51PM</p> <p>21 of this document?</p> <p>22 A Generally it just means that, you know,</p> <p>23 whoever is on that file -- sorry, on that line has</p> <p>24 contributed into it.</p> <p>25 Q So have you contributed -- did you 3:52PM</p> <p style="text-align: right;">Page 185</p>

<p>1 contribute to this document, the authorship of it? 3:52PM</p> <p>2 A It's -- I don't have any concrete memory of</p> <p>3 what I added. It's possible, yes.</p> <p>4 Q Does your name appear next to the owner</p> <p>5 line of many Google documents that you didn't 3:52PM</p> <p>6 contribute to?</p> <p>7 MR. KAPLAN: Object to form, scope.</p> <p>8 THE WITNESS: There are lots of Google</p> <p>9 documents, so I can't say.</p> <p>10 BY MR. BOYEY: 3:52PM</p> <p>11 Q So your testimony is that the owner line</p> <p>12 with your name next to it does not mean that you</p> <p>13 contributed to this document?</p> <p>14 MR. KAPLAN: Objection, misstates</p> <p>15 testimony, form, scope. 3:52PM</p> <p>16 THE WITNESS: No, I'm not saying that I</p> <p>17 did not contribute to it, rather I don't remember</p> <p>18 exactly what I contributed to this doc.</p> <p>19 BY MR. BOYEY:</p> <p>20 Q But this is a Google document; right? 3:53PM</p> <p>21 A It looks like one.</p> <p>22 Q And your name appears to it; right?</p> <p>23 A Yes.</p> <p>24 Q It's dealing with -- the subject matter is</p> <p>25 "cast stream transfer." 3:53PM</p> <p style="text-align: right;">Page 186</p>	<p>1 MR. KAPLAN: Objection, scope. 3:56PM</p> <p>2 THE WITNESS: Someone from Google HR.</p> <p>3 BY MR. BOYEY:</p> <p>4 Q But you don't know whether that individual</p> <p>5 is still at Google; is that your testimony? 3:56PM</p> <p>6 MR. KAPLAN: Objection.</p> <p>7 THE WITNESS: Where I am right now,</p> <p>8 current I don't know.</p> <p>9 BY MR. BOYEY:</p> <p>10 Q Go ahead and turn to PDF Page 5 of this 3:56PM</p> <p>11 document, ending in 938 in the Bates number.</p> <p>12 A Okay.</p> <p>13 Q Go ahead and read starting from the</p> <p>14 paragraph that says "Instead" through the Number 7</p> <p>15 bullet point that's listed there. 3:56PM</p> <p>16 Because I want to ask you about these</p> <p>17 steps that are specified here.</p> <p>18 A Okay. I've read to Step 7.</p> <p>19 Q So my question is: Is this an accurate</p> <p>20 explanation of how stream transfer works for the 3:58PM</p> <p>21 YouTube apps?</p> <p>22 A What is actually described here from my</p> <p>23 understanding is rather vague and not accurate.</p> <p>24 Q What is not accurate about what is</p> <p>25 described here? 3:58PM</p> <p style="text-align: right;">Page 188</p>
<p>1 And this presumably is written for other 3:53PM</p> <p>2 people working on the cast stream transfer at</p> <p>3 Google; right?</p> <p>4 A That's rather vague. Again, there's</p> <p>5 multiple owners of the file. It's hard to identify -- 3:53PM</p> <p>6 there is no rhyme or reason what the original intent</p> <p>7 of this was.</p> <p>8 Q You've taken a look at this document.</p> <p>9 What was the purpose of this document?</p> <p>10 A From reading this, it looks like a 3:54PM</p> <p>11 project/mini design doc explaining the topic of cast</p> <p>12 stream transfer and YouTube.</p> <p>13 Q Next to the owner, there's also the name</p> <p>14 "foxykeep." Who or what is foxykeep a reference to?</p> <p>15 A I previously worked with -- foxykeep would 3:55PM</p> <p>16 be the outback or email alias -- or email, sorry, for</p> <p>17 the engineer.</p> <p>18 Q What engineer?</p> <p>19 A Nicholas, his last name. So he previously</p> <p>20 worked on Orbit. 3:55PM</p> <p>21 Q Is Nicholas still at Google?</p> <p>22 A I don't know.</p> <p>23 Q Who would know the answer to that question</p> <p>24 who foxykeep is and whether that person still works</p> <p>25 at Google? 3:56PM</p> <p style="text-align: right;">Page 187</p>	<p>1 A Some of the wording, particularly "Kabuki 3:58PM</p> <p>2 loads itself" better than we do that. It relies on</p> <p>3 the cast device to do that.</p> <p>4 This also implies that -- this also</p> <p>5 implies that when stream transfer occurs between in 3:59PM</p> <p>6 multiple receiver devices that YouTube runs on, if</p> <p>7 the -- if a previous sender was connected to the</p> <p>8 first device, that it would reconnect to the new</p> <p>9 device. I don't think it actually happens today.</p> <p>10 Q All right. So yes, I want to know what 3:59PM</p> <p>11 actually happens today in certain transfer contexts.</p> <p>12 I was hoping that this could guide that discussion.</p> <p>13 But maybe we can walk through the steps</p> <p>14 and you can tell me if that happens today or not.</p> <p>15 And I'm going to modify the situation because what 4:00PM</p> <p>16 I'm interested in is the original device being a Hub</p> <p>17 device. Do you follow me there?</p> <p>18 A Yes. And which YouTube app are we talking</p> <p>19 about?</p> <p>20 Q Why don't we start with the YouTube main 4:00PM</p> <p>21 app running on the Hub device, if that works for</p> <p>22 you.</p> <p>23 A Okay.</p> <p>24 Q My understanding is the user is presented</p> <p>25 with an option to hit the cast icon on the Hub 4:00PM</p> <p style="text-align: right;">Page 189</p>



<p>1 device and that will pull up a menu that says "cast 4:00PM 2 to" and it will show any video devices that are 3 available. 4 Is that consistent with your 5 understanding? 4:00PM 6 A You're talking about the UI within the 7 Google Hub device; right? 8 Q Correct. 9 A Yes, in the devices shown would be in the 10 supported cast enabled devices. That's my 4:01PM 11 understanding. 12 Q So the user could decide to transfer the 13 video playback from the Hub to another screen 14 device; correct? 15 A Yes, that's possible. 4:01PM 16 Q Okay. So that's the context that I want 17 to work in here with the YouTube app. 18 So I want to know -- we don't know -- if 19 you can explain it to me without us going through 20 these steps on the paper, that's fine. I just want 4:01PM 21 to know the different messages, the different 22 processes that happen there. 23 So what happens after the user selects to 24 transfer from the Hub to another screen device? 25 A Sure. So the stream transfer as YouTube 4:01PM Page 190</p>	<p>1 So on resolving that, what happens at 4:03PM 2 least from the perspective of YouTube on that device 3 is the cast receiver, whatever device it is -- let's 4 assume that it's another Nest Hub, it loads the 5 appropriate cast receiver app. 4:04PM 6 And then upon loading, the cast SDK 7 invokes the other callback, I believe it's resume 8 session, something like that. 9 Essentially that API passes along the 10 serialized -- what do you call it -- playback state 4:04PM 11 that the original device -- or the original YouTube 12 client had sent. So it will then unpack that and 13 from that data payload, it will then know like which 14 playback to actually resume playback for. 15 Q That was super helpful and there is a lot 4:05PM 16 I'll unpack there. 17 Let's start at the end where we're talking 18 about the destination. I can use source as the 19 first one and we'll use the destination at the 20 second one. 4:05PM 21 So we're at the destination receiver. 22 That will -- the playback state, I think you called 23 it, in the resume session message potentially, will 24 that cause that destination device to load the 25 applicable YouTube app? 4:05PM Page 192</p>
<p>1 implemented is built on what is provided by the cast 4:01PM 2 SDK, specifically there are, I believe, two APIs, the 3 cast SDKs -- I don't recall the exact name, but they 4 are something like store -- store session and resume 5 session. Essentially there's two API. 4:02PM 6 So when -- on the original Nest Hub 7 device, let's call that the source device. 8 Q Okay. 9 A When a user selects a device to transfer to, 10 the YouTube client will get a callback from the cast 4:02PM 11 SDK to store state essentially. And what that does is 12 YouTube will construct a -- the payload that is 13 returned to -- in that cast SDK API callback. And 14 that payload contains, you know, the current playback 15 state. 4:03PM 16 So that gets serialized, it gets returns 17 to the cast SDK and that's pretty much it from 18 YouTube's perspective from the original device. 19 And then what happens then is that the 20 cast -- you know, the cast platform, cast 4:03PM 21 infrastructure, whatever you want to call it, does 22 that behind the scenes that we're unaware of and it 23 will -- it will sort of figure out which destination 24 device that the user had wanted to stream transfer 25 to. 4:03PM Page 191</p>	<p>1 MR. KAPLAN: Object to form. Go ahead. 4:05PM 2 THE WITNESS: No, because when you say 3 "load the YouTube app," I think of that as the cast 4 device, you know, the OS or the infrastructure is 5 the part that is responsible for -- so at that 4:05PM 6 point, the YouTube app is already loaded. 7 BY MR. BOYEA: 8 Q Okay. So at the point that the 9 destination receiver receives resume session, the 10 YouTube app was already launched; is that the case? 4:06PM 11 A Yes. 12 Q Okay. Do you know what message causes the 13 destination receiver to launch the YouTube app in 14 this particular circumstance? 15 A No. No, I don't, because that's specific to 4:06PM 16 the cast infrastructure. 17 Q Okay. So is there some sort of cast 18 specific message that gets sent from the source 19 sender and the destination receiver, though? Is 20 that fair to say at a high level? 4:06PM 21 A I can't stipulate to that because I don't 22 know. I can't assume that it's from the original to 23 destination, whether it's one message or multiple. I 24 don't know. 25 Q I wasn't meaning to limit it to one 4:07PM Page 193</p>



<p>1 BY MR. BOYEA: 4:39PM</p> <p>2 Q Welcome back, Mr. Mo. Let's return -- if</p> <p>3 you could pull up Exhibit 5 again. Let me know once</p> <p>4 you have that up.</p> <p>5 A Yes. 4:39PM</p> <p>6 Q Go to Page 2 -- sorry, if you can go ahead</p> <p>7 and go to Page 2 when you get a chance.</p> <p>8 A Okay.</p> <p>9 Q All right. So I want to ask you some</p> <p>10 questions on the -- what we referred to earlier as 4:39PM</p> <p>11 the shared queue in the MDx context. Okay?</p> <p>12 A Mm-hmm.</p> <p>13 Q As a starting point, what is Orbit? Is</p> <p>14 Orbit and MDx, are those synonymous?</p> <p>15 A It's confusing even internally. 4:40PM</p> <p>16 Orbit is generally the name of the</p> <p>17 YouTube -- the previous name for the YouTube team</p> <p>18 that, you know, owns the MDx stack. That's one of</p> <p>19 the things that they own.</p> <p>20 But then sometimes people will refer to 4:40PM</p> <p>21 the MDx stack as Orbit as well.</p> <p>22 Q Okay. So if I see documentation referring</p> <p>23 to like an Orbit queue, is that the same thing as</p> <p>24 the shared queue?</p> <p>25 MR. KAPLAN: Object to form. 4:40PM Page 206</p>	<p>1 correct? 4:42PM</p> <p>2 A So to clarify, you're asking for on the</p> <p>3 right, Screenshot 4 would be what happens in the</p> <p>4 context of casting?</p> <p>5 Q I'm trying to use the screenshots to give 4:42PM</p> <p>6 you context of what is currently in the queue on the</p> <p>7 phone and I want to know what happens with respect</p> <p>8 to what is ultimately in the shared queue once the</p> <p>9 cast session is created, if you will?</p> <p>10 A If you could provide maybe a little bit more 4:43PM</p> <p>11 concrete example and we can walk through phases, that</p> <p>12 may help to provide an answer.</p> <p>13 Q Yes. So the phases are -- as shown in</p> <p>14 these screenshots, the current song that's being</p> <p>15 played is "Come Together" by the Beatles and there 4:43PM</p> <p>16 is an autoplay section with various songs below it.</p> <p>17 Do you see that there on Screenshot 4?</p> <p>18 A Yes.</p> <p>19 Q And so the scenario would be a user then</p> <p>20 pressing the cast icon shown in Screenshot 3 to 4:43PM</p> <p>21 cause a cast session to be created with a cast</p> <p>22 receiver?</p> <p>23 A Okay. Yeah, I don't know.</p> <p>24 Q So as Google's 30(b)(6) designee for</p> <p>25 subpart 2 of Topic 1, your answer is you don't know 4:44PM Page 208</p>
<p>1 THE WITNESS: I don't know without 4:40PM</p> <p>2 actually seeing the content.</p> <p>3 BY MR. BOYEA:</p> <p>4 Q With the limited time we have, maybe we'll</p> <p>5 just have to ask another witness that. 4:41PM</p> <p>6 So looking at Screenshots 3 and 4 shown on</p> <p>7 Page 2 here, we have the YouTube Music app. This is</p> <p>8 before a cast session is invoked; okay?</p> <p>9 A Yes.</p> <p>10 Q You'll see in Screenshot 4, there is a 4:41PM</p> <p>11 first song followed by songs listed under autoplay;</p> <p>12 right?</p> <p>13 A Yes.</p> <p>14 Q What I want to know is: When the cast</p> <p>15 session is invoked, will the shared queue get 4:41PM</p> <p>16 populated with the currently playing song and the</p> <p>17 songs following the autoplay section?</p> <p>18 A I don't know.</p> <p>19 Q Who would know the answer to that?</p> <p>20 A Given this looks like YouTube Music, which 4:42PM</p> <p>21 is the app that's shown here, it's a YouTube Music</p> <p>22 functionality, so somebody from the YouTube Music</p> <p>23 team.</p> <p>24 Q And this is functionality related to</p> <p>25 casting from YouTube Music to a cast receiver; 4:42PM Page 207</p>	<p>1 for Google? 4:44PM</p> <p>2 MR. KAPLAN: Objection, form, misstates</p> <p>3 testimony and the context.</p> <p>4 THE WITNESS: Yeah, it's hard to say for</p> <p>5 this specific screenshot that I am not familiar 4:44PM</p> <p>6 with.</p> <p>7 BY MR. BOYEA:</p> <p>8 Q Are you familiar with -- let's step away</p> <p>9 from the screenshot, I guess -- so a circumstance</p> <p>10 where YouTube Music is being played on a sender, 4:44PM</p> <p>11 there is an autoplay section of music that's</p> <p>12 populated on the sender and then the sender casts to</p> <p>13 a cast receiver.</p> <p>14 Are you generally aware of that type of</p> <p>15 circumstance? 4:45PM</p> <p>16 A I'm less familiar with just this list of</p> <p>17 songs under the autoplay, the autoplay section.</p> <p>18 Q As Google's corporate designee on casting</p> <p>19 and on autoplay, at least for YouTube Music, you</p> <p>20 don't know anything beyond what I've been asking you 4:45PM</p> <p>21 about; is that right?</p> <p>22 A I don't know the specifics.</p> <p>23 Q Okay. So you can't tell me what happens</p> <p>24 in the shared queue in this particular example that</p> <p>25 I am curious about? 4:45PM Page 209</p>

<p>1 A Yeah, I don't know -- specifically I don't 4:46PM 2 know what happens with the autoplay, those songs 3 underneath the autoplay. I would say that's a YouTube 4 Music feature.</p> <p>5 MR. BOYEA: At this point this is going to 4:46PM 6 conclude Sonos's questions for today on the 30(b)(6) 7 topics. However, Sonos is going to leave the 8 30(b)(6) deposition of Google open on Topics -- 9 Topic 1, subparts 2 through 7 in view of Google's 10 late production of source code printouts that 4:46PM 11 Sonos's counsel is still not in possession of and in 12 view of Sonos's review of the transcript that 13 reveals any topics that Mr. Mo was not prepared to 14 testify about.</p> <p>15 MR. KAPLAN: For the record, we disagree 4:47PM 16 with that position and we think that the deposition 17 is -- excuse me, we disagree with that position and 18 we believe that the deposition should be wrapped up 19 with respect to the topics that Mr. Mo was 20 designated on. 4:47PM 21 We will however -- 22 MR. BOYEA: We will resolve that later. 23 MR. KAPLAN: We will resolve it later, 24 agreed. And we also reserve our right to read and 25 sign for the 30(b)(6) portion. 4:47PM</p> <p style="text-align: right;">Page 210</p>	<p>1 MR. BOYEA: All right. Because that was 5:31PM 2 part of the 30(b)(6) conversation, I'm going to ask 3 that this be part of the 30(b)(6) portion of the 4 transcript, if you're good with that, Marc.</p> <p>5 MR. KAPLAN: I think that's fair. 5:31PM 6 BY MR. BOYEA: 7 Q Mr. Mo, can you just tell me what exhibit? 8 A Exhibit 5 at Page 2. 9 Q All right. This is the page that has 10 Screenshot 3 and Screenshot 4; is that right? 5:32PM 11 A Yes. 12 Q So what did you want to talk about in this 13 exhibit? 14 A I was wondering if you could -- would you be 15 able to find or explain the content underneath this 5:32PM 16 autoplay section? 17 I'm only asking because, again, I'm not -- 18 I don't work on YouTube Music sender app. So the UI 19 is not familiar to me. So I kind of wanted to have 20 you clarify the actual content underneath because I 5:33PM 21 might have had some misassumption about what it is. 22 Q Let me ask you this, first, Mr. Mo: Did 23 you speak to anybody during any of the breaks about 24 the substance of your testimony here? 25 A No. 5:33PM</p> <p style="text-align: right;">Page 212</p>
<p>1 MR. BOYEA: All right. Do we need to jump 4:47PM 2 off to do the 30(b)(1) in a different session? 3 THE REPORTER: Not from my point of view. 4 I'm not sure about the videographer, though. David? 5 THE VIDEOGRAPHER: No, I don't think we 4:48PM 6 have to. We can just make note of it and we can 7 continue on. 8 MR. BOYEA: Is that okay with you, Marc? 9 MR. KAPLAN: That's fine with me. It 10 sounds like the transcript is going to show that we 4:48PM 11 ended the 30(b)(6) session and we're starting the 12 30(b)(1) session and that's all we're looking for. 13 The separately transcribed I think just 14 means having some indicator designation showing that 15 we're switching over, which it sounds like we have. 4:48PM 16 (Discussion off the record.) 17 (The following testimony was amended to 18 the end of the 30(b)(6) deposition as requested by 19 Counsel.) 20 THE WITNESS: I do have something that I 5:31PM 21 was thinking at the last break over a screenshot in 22 particular that was presented to me. 23 I was wondering if that was something that 24 I can clarify to see if we can further discuss 25 actually? 5:31PM</p> <p style="text-align: right;">Page 211</p>	<p>1 Q So I don't know what more information I 5:33PM 2 can give you other than the content that is 3 appearing below the autoplay is just -- my 4 understanding is it's additional songs that would be 5 played at the sender that's, you know, running the 5:33PM 6 YouTube Music app. 7 So from the user's perspective, if I 8 listened all the way through "Come Together," "Here 9 Comes the Sun" would play immediately following 10 that. 5:34PM 11 A Okay. So that -- those content underneath, 12 what would happen if autoplay is turned off? 13 Q My understanding, at least from the 14 screenshot level, the user-facing level, those would 15 go away and all you would see is "Come Together" in 5:34PM 16 this particular instance. 17 A I see, okay. 18 Q Does that refresh your recollection on 19 anything that we talked about before that you would 20 want to go over again or -- 5:34PM 21 A No. So I wasn't sure whether if I was 22 thinking that everything down there was autoplay, just 23 because it was underneath the autoplay text. But I 24 should have clarified further with you. 25 But no, I think how you explained it, even 5:35PM</p> <p style="text-align: right;">Page 213</p>

<p>1 with that, I don't know what happens. 5:35PM</p> <p>2 MR. BOYE: Okay. Fair enough. I</p> <p>3 appreciate you trying to clarify that and to see if</p> <p>4 you could give any more testimony on it.</p> <p>5 (Start of 30(b)(1) testimony.)</p> <p>6 BY MR. BOYE:</p> <p>7 Q So we're going to transition over to the</p> <p>8 30(b)(1) portion of the deposition.</p> <p>9 So, Mr. Mo, I'm now going to ask you</p> <p>10 questions in your personal capacity. 4:49PM</p> <p>11 We had introduced, before the deposition</p> <p>12 started, a first exhibit which is labeled Mo</p> <p>13 Exhibit 1. Why don't you go ahead and open that up.</p> <p>14 A Okay.</p> <p>15 Q Is this a copy of your LinkedIn profile? 4:49PM</p> <p>16 A No, it's not.</p> <p>17 Q Once I saw you, I did not think that this</p> <p>18 looked like you.</p> <p>19 So do you have your own LinkedIn profile</p> <p>20 or no? 4:49PM</p> <p>21 A Yes, I'm on LinkedIn.</p> <p>22 Q How is your name spelled in your LinkedIn</p> <p>23 profile, Vince or Vincent?</p> <p>24 A It's Vincent Mo.</p> <p>25 Q I think Jae is going to grab that. 4:50PM</p> <p style="text-align: right;">Page 214</p>	<p>1 A I was on the platform software team -- 4:52PM</p> <p>2 sorry, platform infrastructure engineering. It's part</p> <p>3 of the data center infrastructure PA.</p> <p>4 Q Then we did you get involved with YouTube?</p> <p>5 A I joined YouTube in 2016. 4:52PM</p> <p>6 Q It looks like we may have a copy here.</p> <p>7 MR. BOYE: Jae, can you go ahead and</p> <p>8 introduce that for us as the next exhibit, which</p> <p>9 would be Mo Exhibit 11?</p> <p>10 (Exhibit 11 was marked for identification.) 4:52PM</p> <p>11 BY MR. BOYE:</p> <p>12 Q Mr. Mo, let me know when you have that</p> <p>13 pulled up.</p> <p>14 A Yes, I have it.</p> <p>15 Q I think this one looks more like you. Is 4:53PM</p> <p>16 this your LinkedIn profile?</p> <p>17 A Yes, it looks like it.</p> <p>18 Q All right. Did you prepare the contents</p> <p>19 of the LinkedIn profile that we have a copy of here?</p> <p>20 A Like did I write this? 4:53PM</p> <p>21 Q Sure. Like under the experience sections,</p> <p>22 did you write the descriptions that follow?</p> <p>23 A Yes.</p> <p>24 Q Okay. Before you started working on the</p> <p>25 YouTube team, had you worked on any of Google's 4:53PM</p> <p style="text-align: right;">Page 216</p>
<p>1 Let me ask you this: When did you start 4:50PM</p> <p>2 working at Google?</p> <p>3 A I started some time in 2010.</p> <p>4 Q What were you doing before you joined</p> <p>5 Google? 4:50PM</p> <p>6 A I was a software engineer at a company</p> <p>7 called EADS North America.</p> <p>8 Q Okay. I have limited time, so I'm not</p> <p>9 going to get into too much. But where were you at</p> <p>10 before that EADS North America company? 4:50PM</p> <p>11 A I was in school at UCI.</p> <p>12 Q Did you obtain a degree at UCI?</p> <p>13 A Yes, I did.</p> <p>14 Q What is your degree in?</p> <p>15 A I have a BS in computer engineering and 4:51PM</p> <p>16 electrical engineering.</p> <p>17 Q Do you have any other degrees?</p> <p>18 A No, I don't.</p> <p>19 Q No master's degrees or anything like that?</p> <p>20 A Correct. 4:51PM</p> <p>21 Q What is the date of your graduation?</p> <p>22 A End of 2004.</p> <p>23 Q You started at Google in 2010. What were</p> <p>24 you working on when you first started working at</p> <p>25 Google? 4:52PM</p> <p style="text-align: right;">Page 215</p>	<p>1 media apps at all? 4:53PM</p> <p>2 A No, I did not.</p> <p>3 Q So you didn't work on the Google Play</p> <p>4 Music app?</p> <p>5 A No. 4:54PM</p> <p>6 Q After you joined YouTube, did you work on</p> <p>7 the Google Play Music app at all?</p> <p>8 A No.</p> <p>9 Q Do you have Google devices at your home?</p> <p>10 A Yes, I do. 4:54PM</p> <p>11 Q Do you have any Chromecast devices?</p> <p>12 A Yes.</p> <p>13 Q What Chromecast device do you have at</p> <p>14 home?</p> <p>15 A I have Chromecast Ultra, Chromecast Google 4:54PM</p> <p>16 TV, probably the first generation Chromecast as well.</p> <p>17 A good number of Chromecast models for previous</p> <p>18 testing and development.</p> <p>19 Q What about any of the Nest or Home smart</p> <p>20 speakers, do you have any of those at home? 4:55PM</p> <p>21 A Yes, I do.</p> <p>22 Q Which ones do you have at home?</p> <p>23 A I have Nest Hub, Nest Hub Max, Nest WiFi.</p> <p>24 Do you want me to keep ongoing?</p> <p>25 Q Yes, let's talk about whatever you have at 4:55PM</p> <p style="text-align: right;">Page 217</p>

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<p>1 A I'm unaware. 5:11PM</p> <p>2 MR. BOYEA: Why don't we take maybe our</p> <p>3 last break and I'll look through my notes and see if</p> <p>4 there's anything else that I want to ask Mr. Mo.</p> <p>5 And we can jump back on. How about at 7:20 Central 5:12PM</p> <p>6 time?</p> <p>7 MR. KAPLAN: Okay.</p> <p>8 THE VIDEOGRAPHER: Off the record at</p> <p>9 5:12 p.m.</p> <p>10 (Recess taken.) 5:12PM</p> <p>11 THE VIDEOGRAPHER: We're back on the</p> <p>12 record at 5:22 p.m. Pacific time.</p> <p>13 BY MR. BOYEA:</p> <p>14 Q All right. Mr. Mo, just a few more</p> <p>15 questions for you. 5:22PM</p> <p>16 Can you open up Exhibit 6 again for me?</p> <p>17 A Okay.</p> <p>18 Q At the very bottom of Page 1 of this</p> <p>19 exhibit, you're going to see a sentence that says,</p> <p>20 "The Cast team are thinking." 5:22PM</p> <p>21 Do you see that?</p> <p>22 A I'm sorry, page what?</p> <p>23 Q The first page, the very bottom of the</p> <p>24 first page.</p> <p>25 A Okay. Yes, I see it. 5:22PM</p> <p style="text-align: right;">Page 226</p>	<p>1 Q We talked about iOS versus Android YouTube 5:24PM</p> <p>2 senders earlier; right?</p> <p>3 A Yes.</p> <p>4 Q And both -- for both iOS and Android</p> <p>5 YouTube senders, a set playlist message is going to 5:25PM</p> <p>6 be sent; correct? Like it doesn't matter whether or</p> <p>7 not iOS or Android operating system is being used;</p> <p>8 is that correct?</p> <p>9 MR. KAPLAN: Object to form.</p> <p>10 THE WITNESS: It depends on the 5:25PM</p> <p>11 receiver -- the receiver device.</p> <p>12 BY MR. BOYEA:</p> <p>13 Q In what way does it depend on the receiver</p> <p>14 device?</p> <p>15 A For example, on iOS, it supports AirPlay and 5:25PM</p> <p>16 AirPlay is not the same as the way that cast works.</p> <p>17 Q Fair enough. Let's stick in the cast</p> <p>18 context.</p> <p>19 So when casting from a YouTube sender,</p> <p>20 does the operating system of the YouTube sender 5:26PM</p> <p>21 matter with respect to whether or not a set playlist</p> <p>22 message is sent?</p> <p>23 A No. IOS YouTube clients or Android YouTube</p> <p>24 clients that supports the MDx library will go through</p> <p>25 the same path. 5:26PM</p> <p style="text-align: right;">Page 228</p>
<p>1 Q Can you read that paragraph that starts, 5:22PM</p> <p>2 "The Cast team are thinking," and let me know once</p> <p>3 you've read it.</p> <p>4 A Okay. I just read it.</p> <p>5 Q Do you know, is what's being discussed 5:23PM</p> <p>6 here with respect to eliminating the need for dial</p> <p>7 and cast, is that something that the cast team is</p> <p>8 currently working on?</p> <p>9 A I don't know if it's currently -- I don't</p> <p>10 know what they are currently working on. 5:23PM</p> <p>11 Q To your knowledge, is this relayed casting</p> <p>12 feature that's referred to in this paragraph, is</p> <p>13 that implemented in any way currently?</p> <p>14 A From my recollection, I believe that it's</p> <p>15 supported at least in some cases. I don't know what 5:23PM</p> <p>16 the some cases are.</p> <p>17 Q Do you know, is that a feature that is</p> <p>18 used by the general public today when using casting?</p> <p>19 A I actually don't know.</p> <p>20 MR. KAPLAN: Object to form on that. 5:24PM</p> <p>21 BY MR. BOYEA:</p> <p>22 Q Are you aware of any changes to how sender</p> <p>23 devices discover cast targets on a local area</p> <p>24 network?</p> <p>25 A No, I'm not aware. 5:24PM</p> <p style="text-align: right;">Page 227</p>	<p>1 Q And in terms of the cast receiver -- and 5:26PM</p> <p>2 let's limit the cast receiver again to Google's own</p> <p>3 cast receiver, so the Chromecast devices, the Nest</p> <p>4 and the Home smart speakers. Okay?</p> <p>5 Will the cast receiver operate the same in 5:26PM</p> <p>6 the YouTube context regardless of whether an Android</p> <p>7 or an iOS sender is involved?</p> <p>8 MR. KAPLAN: Object to form.</p> <p>9 THE WITNESS: I'm unaware of any logic on</p> <p>10 the receiver side that differs depending on iOS or 5:27PM</p> <p>11 Android alone.</p> <p>12 BY MR. BOYEA:</p> <p>13 Q We spoke earlier about a message that the</p> <p>14 sender -- the YouTube sender will transmit to a cast</p> <p>15 receiver to instruct it to launch a specific app. 5:27PM</p> <p>16 Do you recall that?</p> <p>17 A Can you repeat that?</p> <p>18 Q Yes. So earlier we talked about how a</p> <p>19 YouTube sender will transmit a message in a cast</p> <p>20 context to instruct the cast receiver to launch a 5:28PM</p> <p>21 particular YouTube app.</p> <p>22 Do you remember that?</p> <p>23 A Yes. Was there a specific -- can you jog my</p> <p>24 memory whether that was a specific like a user flow?</p> <p>25 Q No, we were just saying in the general 5:28PM</p> <p style="text-align: right;">Page 229</p>

## HIGHLY CONFIDENTIAL - SOURCE CODE

<p>1 context of this casting of a YouTube app, that there 5:28PM</p> <p>2 would be a launch, something that -- a message that</p> <p>3 would instruct the cast receiver to launch a</p> <p>4 specific YouTube app.</p> <p>5 Is that consistent with your understanding 5:28PM</p> <p>6 of how it works?</p> <p>7 A I don't know the specific message or</p> <p>8 messages that results from that flow.</p> <p>9 Q Yes. And I think that's what you said</p> <p>10 earlier, that you couldn't remember the specific 5:28PM</p> <p>11 message name but there would be a message sent by</p> <p>12 the sender device to the cast receiver in the cast</p> <p>13 context for YouTube; is that right?</p> <p>14 A Yes. I also mentioned there were different</p> <p>15 layers. I know the messages that are sent at the 5:29PM</p> <p>16 YouTube layer, but at the sort of beneath YouTube, I</p> <p>17 don't know.</p> <p>18 Q Right. But I think we established that</p> <p>19 there has to be some message that gets sent by the</p> <p>20 sender device to the cast receiver instructing the 5:29PM</p> <p>21 cast receiver to launch a specific YouTube app;</p> <p>22 right?</p> <p>23 A I suppose that's -- something along the</p> <p>24 lines of that, you know, would happen, but I don't</p> <p>25 know. 5:29PM</p> <p style="text-align: right;">Page 230</p>	<p>1 I was wondering if that was something that 5:31PM</p> <p>2 I can clarify to see if we can further discuss</p> <p>3 actually?</p> <p>4 MR. BOYEA: All right. Because that was</p> <p>5 part of the 30(b)(6) conversation, I'm going to ask 5:31PM</p> <p>6 that this be part of the 30(b)(6) portion of the</p> <p>7 transcript, if you're good with that, Marc.</p> <p>8 MR. KAPLAN: I think that's fair.</p> <p>9 BY MR. BOYEA:</p> <p>10 Q Mr. Mo, can you just tell me what exhibit? 5:31PM</p> <p>11 A Exhibit 5 at Page 2.</p> <p>12 Q All right. This is the page that has</p> <p>13 Screenshot 3 and Screenshot 4; is that right?</p> <p>14 A Yes.</p> <p>15 Q So what did you want to talk about in this 5:32PM</p> <p>16 exhibit?</p> <p>17 A I was wondering if you could -- would you be</p> <p>18 able to find or explain the content underneath this</p> <p>19 autoplay section?</p> <p>20 I'm only asking because, again, I'm not -- 5:32PM</p> <p>21 I don't work on YouTube Music sender app. So the UI</p> <p>22 is not familiar to me. So I kind of wanted to have</p> <p>23 you clarify the actual content underneath because I</p> <p>24 might have had some misassumption about what it is.</p> <p>25 Q Let me ask you this, first, Mr. Mo: Did 5:33PM</p> <p style="text-align: right;">Page 232</p>
<p>1 Q Well, I don't want to keep you too long, 5:29PM</p> <p>2 but I want to unpack this because I thought we had</p> <p>3 discussed this earlier but maybe not.</p> <p>4 So the sender device running a YouTube</p> <p>5 app, when a user wants to cast to a cast receiver, 5:30PM</p> <p>6 something has to be sent to the cast receiver to</p> <p>7 tell it to launch a specific YouTube app; right?</p> <p>8 A Yes, something went one way or another</p> <p>9 somehow.</p> <p>10 Q Right. And my question is: That's 5:30PM</p> <p>11 applicable both in the iOS and Android context;</p> <p>12 right? When the sender is an iOS or Android device,</p> <p>13 something gets sent to cause the cast receiver to</p> <p>14 launch a YouTube app; right?</p> <p>15 A I would believe so. 5:30PM</p> <p>16 MR. BOYEA: Okay. I think that is all I</p> <p>17 have for you today, Mr. Mo. I appreciate your time.</p> <p>18 I wish we would have met in different circumstances,</p> <p>19 but I thank you for your time today.</p> <p>20 (The following testimony was attached to 5:31PM</p> <p>21 the end of the 30(b)(6) deposition as requested by</p> <p>22 Counsel.)</p> <p>23 THE WITNESS: I do have something that I</p> <p>24 was thinking at the last break over a screenshot in</p> <p>25 particular that was presented to me. 5:31PM</p> <p style="text-align: right;">Page 231</p>	<p>1 you speak to anybody during any of the breaks about 5:33PM</p> <p>2 the substance of your testimony here?</p> <p>3 A No.</p> <p>4 Q So I don't know what more information I</p> <p>5 can give you other than the content that is 5:33PM</p> <p>6 appearing below the autoplay is just -- my</p> <p>7 understanding is it's additional songs that would be</p> <p>8 played at the sender that's, you know, running the</p> <p>9 YouTube Music app.</p> <p>10 So from the user's perspective, if I 5:33PM</p> <p>11 listened all the way through "Come Together," "Here</p> <p>12 Comes the Sun" would play immediately following</p> <p>13 that.</p> <p>14 A Okay. So that -- those content underneath,</p> <p>15 what would happen if autoplay is turned off? 5:34PM</p> <p>16 Q My understanding, at least from the</p> <p>17 screenshot level, the user-facing level, those would</p> <p>18 go away and all you would see is "Come Together" in</p> <p>19 this particular instance.</p> <p>20 A I see, okay. 5:34PM</p> <p>21 Q Does that refresh your recollection on</p> <p>22 anything that we talked about before that you would</p> <p>23 want to go over again or --</p> <p>24 A No. So I wasn't sure whether if I was</p> <p>25 thinking that everything down there was autoplay, just 5:34PM</p> <p style="text-align: right;">Page 233</p>